DOCUMENT RESUME

ED 021 216 24 AL 001 320

By- Smith, Henry Lee, Jr.; Sustakoski, Henry J.

THE APPLICATION OF DESCRIPTIVE LINGUISTICS TO THE TEACHING OF ENGLISH AND A STATISTICALLY-MEASURED COMPARISON OF THE RELATIVE EFFECTIVENESS OF THE LINGUISTICALLY-ORIENTED AND TRADITIONAL METHODS OF INSTRUCTION.

State Univ. of New York, Buffalo. Dept. of Anthropology and Linguistics.; State Univ. of New York, Buffalo. Research Foundation.

Spons Agency- Office of Education (DHEW), Washington, D.C. Bureau of Research.

Report No- CRP-1856

Bureau No- BR-5-0668

Pub Date 68

Note- 240p.

EDRS Price MF-$1.00 HC-$9.68

Descriptors- COMPARATIVE STATISTICS, *DESCRIPTIVE LINGUISTICS, *ENGLISH INSTRUCTION, HIGH SCHOOL CURRICULUM, INSTRUCTIONAL MATERIALS, MATERIAL DEVELOPMENT, RESEARCH AND DEVELOPMENT CENTERS, *RESEARCH PROJECTS, *TEACHING METHODS, TESTING, *TRADITIONAL GRAMMAR

Identifiers- *Buffalo English Linguistics Project

The Buffalo English Linguistics Project was planned as a controlled experiment testing the comparative effectiveness of two general approaches to English language study on the secondary school level--the traditional and the linguistic. Paired groups of high school English classes matched on the basis of grade level and socio-economic criteria were chosen as experimental and control subjects. A corollary objective of the Project was the compilation and distribution of teaching materials derived from linguistic descriptions of English. (See AL 001 318 and AL 001 319.) A second corollary was the orientation of teachers, who acted as intermediaries between the Buffalo English Linguistics Project staff and the experimental subjects. This report presents the rationale for a linguistic approach to teaching English, a discussion of the aspectual analysis upon which the materials in the Project were based, and a description of the general procedures followed. In discussing the results of the Project, the authors point out that "all experimental groups, and none of the control groups, scored remarkably better [on the Carroll Modern Language Aptitude Test] after the introduction of a linguistic component." Appended are the Project's proposal, a projected proposal for further study, socio-economic data, and tests. (AMM)

THE APPLICATION OF DESCRIPTIVE LINGUISTICS TO THE TEACHING OF ENGLISH AND A STATISTICALLY-MEASURED COMPARISON OF THE RELATIVE EFFECTIVENESS OF THE LINGUISTICALLY-ORIENTED AND TRADITIONAL METHODS OF INSTRUCTION

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

COOPERATIVE RESEARCH PROJECT NO. 1856

HENRY LEE SMITH, JR.
AND
HENRY J. SUSTAKOSKI

STATE UNIVERSITY OF NEW YORK
AT BUFFALO
RESEARCH FOUNDATION OF
STATE UNIVERSITY OF NEW YORK
BUFFALO, NEW YORK

AL 001 320

BR-5-0668
PA-24

THE APPLICATION OF DESCRIPTIVE LINGUISTICS TO THE TEACHING OF ENGLISH

AND

A STATISTICALLY-MEASURED COMPARISON OF THE RELATIVE EFFECTIVENESS OF THE LINGUISTICALLY-ORIENTED AND TRADITIONAL METHODS OF INSTRUCTION

Cooperative Research Project No. 1856

Henry Lee Smith, Jr.
and
Henry J. Sustakoski

1968

The research reported herein was supported by
the Cooperative Research Program of the Office of
Education, U. S. Department of Health, Education,
and Welfare

0. Introduction

0.1. Overall Plan. Cooperative Research Project No. 1856 was planned as a controlled experiment testing, on the secondary school level, the comparative effectiveness of two general approaches to English language study. These two approaches have been called (1) 'traditional,' consisting of the materials and methods in general use in the public school;[1] and (2) 'linguistic,' an approach based on the results of analysis of English by scholars in the field of linguistics.

Direct implementation of this project was to be made through the use of paired groups of experimental and control subjects, the groups consisting of high school English classes matched on the basis of grade level and socio-economic criteria. The cooperation of school systems and of individual teachers was a vital factor in recruitment of subjects.

A corollary objective of Cooperative Research Project No. 1856 has been the compilation and distribution of teaching materials derived from linguistic descriptions of English. Existing linguistic analyses have been made piecemeal, covering various aspects of the English language, and based on various points of view. For purposes of the present project it was necessary to compile a complete curriculum, consistent in its approach, for use as a text book by the experimental subjects.

---

[1] It is not claimed that the educationists concerned with secondary teaching of English grammar are in any sense a monolithic group--some of them, indeed, have been influenced by structural linguistics. It *is* asserted that no approach *based* on linguistic analysis was in use in this field during the course of the project and to this extent a 'traditional' approach can be opposed to one linguistically derived. It would be equally specious to refer to a unified 'linguistic' approach in any sense but this. Presently many of the schools that use a text that is partially linguistically oriented actually omit the linguistic chapters relying on those sections that are more traditionally oriented.

A second corrolary was the orientation of teachers, who were to act as intermediaries between the Buffalo English Linguistics Project[1] staff and the experimental subjects, to the use of the linguistically-based teaching materials.

The following sections, 0.2 - 0.6, describe the personnel, physical facilities, and working plan of Cooperative Research Project 1856.

0.2. Buffalo English Linguistics Project. Cooperative Research Project 1856 was initiated by its Principal Investigators, Henry Lee Smith, Jr., Ph.D., who was at that time chairman of the Department of Anthropology of the State University of New York at Buffalo (then the University of Buffalo); and Henry J. Sustakoski, who was a teaching fellow and graduate student in the same department.

Dr. Henry Lee Smith, Jr. has a long-standing interest in English structure and has in recent years had much contact with high school and elementary school teachers who have been participants in university classes and workshops under his direction. Such student-educators have become interested in -- and often highly enthusiastic about -- the applicability of a linguistic approach at the elementary and secondary level; on an individual basis many have attempted to work their new perspective on English structure into their own classroom presentation. Such individual attempts, predictably, can have limited effectiveness -- first, because in such an attempt linguistic information is superimposed on a more inclusive curriculum based on an incompatible point of view; and, secondly, because an individual teacher's more or less crusading efforts are not likely to meet with understanding and support from his local school administration.

---

[1] The Buffalo English Linguistics Project is a research subsidiary of the Department of Anthropology of the State University of New York at Buffalo. It was established as the facilitating organization for Cooperative Research Project No. 1856.

Such considerations led to discussions about the possibility of an organized project, in which a linguistic approach would be applied to all aspects of English language study -- giving a framework which would support rather than contradict attempts in this direction by the teacher, and in which the support of administrative personnel was formally assured. It was hoped -- and it proved to be the case -- that the experimental nature of a project in which the relative effectiveness of a new approach would be objectively tested under controlled conditions, would be of real interest to educators in general, and would gain the support of administrators in authorizing participation of school classes both as experimental and as control subjects.

Henry J. Sustakoski has had both practical experience as a teacher of English at the high school and college levels, and extensive training in structural linguistics. He proposed the specific research plan undertaken, and has had the responsibility for guiding the Buffalo English Linguistics Project through all stages of project research.

Early phases of this research included the consideration of curriculum -- the examination of available linguistically-derived teaching materials and planning for the development of a curriculum based on such materials. Dr. Wilmer Trauger, chairman of the Department of English at New York State University College at Potsdam, was called upon in formulating these aspects of the project, as the Project Teaching of English Specialist.

Other original members of the research project -- involved in formulating specialized technical aspects of the original proposal for Cooperative Research Project 1856, as well as in facilitating the progress of the research -- are Dr. S. David Farr, the Project Statistician, and Mark Kennedy, the Project Sociologist, both of the State University of New York at Buffalo.

Austin McG. Fox, a noted secondary-school educator in the field of English, was early asked to join the project as Training Consultant and coordinator in charge of orientation and liason with the teachers in the control phase of the experiment.

Dr. Hans Gottschalk, of the Department of English of the State University College at Geneseo, and Julian Granberry, an experienced teacher of linguistics and languages, and a doctoral student in the Department of Anthropology of the State University of New York at Buffalo, joined the staff of the Buffalo English Linguistics Project during the planning period (in February, 1963) and have been active participants in planning and writing materials and tests, teacher orientation, and other phases of the work.

Dr. Nancy P. Hickerson, who joined the Project staff in September, 1964, has shared the responsibility for guiding the project and writing, revising and editing materials -- including the present report -- with H. Sustakoski, H. Gottschalk, and J. Granberry.

Harold Stein and Arthur George, both faculty members in high schools participating in the research project and both with training in linguistics, have been at various times directly associated with the project staff as Training and Materials Consultants and contributed to the writing of the text materials.
John Regan and Thomas Fitzsimons, also educators with training in linguistics, have also participated as consultants.

Leon Weaver and William DeYoung, as Assistant Testing Coordinators, had responsibility for maintaining records on all subjects and preparing this data for computer processing. The final, most demanding phase of this work was carried out under the supervision of Mrs. Gayle Thomas, who joined the project staff as Research Assistant in May, 1965.

Other Research Assistants, who were employed in gathering materials during the first year of project research were: Anthony D'Agostino, Marshall Durbin, Mridula Adenwala.

Secretarial Assistance has been rendered the Project staff by, successively, Carole Corwin, Virginia Muniak, Carole Dautch, Joanne Kaplan and Adrienne Gerstenzang.

0.2.1. The following brief vita present the professional qualifications of the academic staff of the Buffalo English Linguistics Project.

Henry Lee Smith, Jr., Ph.D., Princeton University. Professor of Linguistics and English and Chairman, (until June, 1965) Department of Anthropology, State University of New York at Buffalo, *Principal Investigator*. Set up and headed Language School of Foreign Service Institute, (Dean of School and Professor of Linguistics). Officer in Charge, Language Section of Information and Education Division, U. S. Army. Conducted radio program, "Where Are You From?", WOR and Mutual Network. Conducted 13 TV programs, "Language and Linguistics." National Educational Television Network. Published, with George L. Trager, *An Outline of English Structure*; also *Linguistic Science and the Teaching of English*; "Linguistics: A Modern View of Language" in *An Outline of Man's Knowledge of the Modern World*, ed. L. Bryson. Articles in many professional journals. Director of workshops in linguistics and the teaching of English at the University of Buffalo and Potsdam State Teachers College and lecturer of same and allied subjects at many universities and before conferences of teachers and administrators. Directed workshop on linguistics and reading, published articles on the linguistic approach to English prosody. Linguistic consultant on the development of primers and pre-primers.

Henry J. Sustakoski, Associate Professor, Department of English, State University College at Buffalo, *Principal Investigator*. Formerly teacher of 11th and 12th year English and Journalism, Akron, New York. Member Phi Delta Kappa. Recipient ACLS Summer Study Grant. Inaugurated series of intensive annual short courses in linguistics, University of Alberta. Co-chairman, Linguistics Committee, New York State English Council. Linguistic Consultant, New York State Education Department and New York Telephone Company. Addresses on linguistics and teaching of English and Reading, Annual meetings of New York State English Council and Western Zone meetings, New York State Teachers Association. Addresses on linguistics to English workshops at State University Colleges at Brockport and Geneseo. Taught in-service courses in linguistics to English and language faculties at Amherst, Williamsville, Springville and Bishop Turner High Schools. Taught extension course in English Structure at North Tonawanda schools. Presently directing in-service training in linguistics for Rochester area English department chairmen under auspices of Genesee Valley School Study Council. Texts on English Structure for teachers, for college freshmen and a high school series currently in preparation with collaborators.

Wilmer Trauger, Ph.D., Harvard University. Professor of English and Chairman of the Department, State University College at Potsdam. Project Teaching of English Specialist. Taught high school English. Supervised intermediate and junior high school student-teachers in the Campus School at Potsdam State University College. Chairman of English Department since 1931. Teaches courses in linguistics, recent research in teaching language arts, literature, and composition. Co-director, with Dr. Smith, of workshop on Linguistic Science and the Teaching of English, held at the University of Buffalo. Consultant to various study groups (teachers) on the application of linguistics. Taught at University of Maine courses in teaching of English. Conducted experiments in developing audio-visual materials useful in teaching language. Will attend University of Pittsburgh seminar on use of overhead projectors and opaque projectors in teaching of linguistics.

Hans Gottschalk, Ph.D., is Chairman of English at the State University College at Geneseo, New York. He received his B.A. and M.A. from the New York University and his Ph.D. from the State University of Iowa where his dissertation was on Edgar Allan Poe. He previously taught at the State University of Iowa, Ohio State University, Wisconsin State College at Eau Claire, New Lincoln School in New York City and Duquesne University. He has been Executive Secretary of the New York State English Council since 1959, and has served on various committees of the National Council of Teachers of English, the Conference on College Composition and Communication, the Modern Language Association, the National Society for the Study of Communication, and the New York State Speech Association. He has published in The English Record, Journal of English and Germanic Philology, CCC, Science and Society, New York State Education and is contributor to Abstracts in English Studies. He teaches courses in the English language, English Methods, and Literature, as well as supervising Student Teachers in English.

Julian Granberry, a doctoral candidate in linguistics at the State University of New York at Buffalo and Research Associate in Linguistics with the Project, has a B.A. in anthropology from Yale University (1951) and an M.A. in anthropology from the University of Florida (1955). His concentration within the field of anthropology has been in the area of linguistic theory and descriptive linguistics, with emphasis on native American languages. He has published in the field of linguistics in various professional journals. He has taught for fifteen years. His university teaching experience includes work at the University of Florida, Rollins College, Rochester Institute of Technology, State University of New York at Buffalo, and St. John Fisher College. High School teaching experience (9th, 10th, and 11th grades) was gained at Winter Park High School, Florida. He has also taught Kindergarten and Elementary school children as part of the program of the Institute of Languages, Orlando, Florida. The greatest bulk of his teaching has been in descriptive linguistics, modern languages (Spanish, German, French, Russian), and English as a foreign language on all of the above levels. For several years he also served as director of a professional technical translations bureau (largely Russian and Spanish materials) in Orlando, Florida.

Nancy P. Hickerson, Ph.D., Indiana University. Assistant Professor of Anthropology, New York State University College at Buffalo. Linguist in charge of Air Force courses in Russian and Assistant Director, Intensive Language Training Center, Indiana University, 1959-1963. Co-grantee for ethnological survey of British Honduras sponsored by Research Institute for the Study of Man, 1963-64, and co-author of forthcoming report. Author of several journal articles on American Indian languages.

S. David Farr, Ph.D., Syracuse University. Associate Professor of Education and Director, Educational Research Center, University of Buffalo. Project Statistician. Research Associate, Syracuse University, 1957-58. U. S. Office of Education Cooperative Research Project No. 048. Currently co-director, Multi-district study of Large Group Instruction in Chemistry, supported by New York State Department of Education.

Mark Kennedy, M.A., University of Texas, Lecturer in Sociology at the University of Buffalo. Project Sociologist. Instructor in Sociology, Tulane University, Summer, 1956 and 1957; Assistant Professor of Sociology, Memphis State University, Tennessee, 1957-1959; Research Person, Gailor Psychiatric Hospital, Memphis, Tennessee, 1958 and 1959; Director of Research Division, Health and Welfare Planning Council of Memphis and Shelby County, Tennessee, 1959-61.

0.3. Schedule of Research.

0.3.1. Original Proposal. The original proposal for Cooperative Research Project 1856 was submitted in March, 1962. The proposed research was to begin with the academic year in September, 1962, and was to consist of three phases:

(1) a year devoted to evaluation of existing materials and preparation of new materials, alignment of school systems for participation in the project, and selection and orientation of teachers. This was planned for Fall, 1962 through Summer, 1963.

(2) the academic year devoted to the experimental phase of the research project, including pre-testing all subjects, teaching of special curriculum to experimental subjects, and post-testing all subjects. This phase was to include the period Fall, 1963 to Spring, 1964.

(3) a final period of analysis of data and evaluation of results. This was projected for Summer and Fall, 1964, with the final report scheduled for completion by December, 1964.

0.3.2. Revised Proposal. Following the completion of most of the original phase (2), in March, 1964, application was made for a continuation of the research project. Basically, the continuation involved a second year's replication of phase (2). This extension of the research was justified on the basis of the tremendous amount of original teaching materials which were developed (see section 2.3.) and the resultant need felt, on the part of participating teachers, for further experience in presenting the materials, both for the sake of improved experimental results and in order to improve the status of the linguistic approach in their respective schools.

0.3.3. Actual calendar. With this amendation of the original schedule, the actual calendar of the Buffalo English Linguistics Project was as follows (listing by calendric quarter, with abbreviated indication of which project personnel were employed in any given quarter and a summary of activities pursued during each quarter):

Quarter	Date	Personnel*	Activities
1	October - December 1962	HLS, HJS, WKT, SDF, MK, AF; JR, HS, TF; MD, MA, AA.	Administrative arrangements with schools. Beginning of in-service courses for experimental group teachers, orientation meetings for all teachers. Research: surveying literature and teaching materials.
2	January - March 1963	HLS, HJS, HG, JG; WKT, SDF, MK, AF; JR, HS, TF; MD, MA, AA.	Administrative arrangements with schools, addition of college-level classes. Orientation and in-service training of experimental and control group teachers. Continuation of materials research, evaluation of testing instruments.
3	April - June 1963	HLS, HJS, HG, JG; WKT, SDF, MK, AF; JR, HS, TF; MD, AA.	Completion of in-service training courses in all schools scheduled for participation. Completion of materials research, preparation of teaching aids and tests.
4	July - September 1963	HLS, HJS, HG, JG; WKT, SDF, MK, AF; AG, HS, TF.	Preparation of teaching materials and teachers' guides. Administration of General Criterion and Intelligence test battery.
5	October - December 1963	HLS, HJS, HG, JG; SDF, WKT, MK, JR, AF; HS, TF, AG.	Administration of General Criterion-Intelligence battery. Teaching phase of experiment in progress. Preparation of socio-economic questionnaire.
6	January - March 1964	HLS, HJS, HG, JG; WKT, SDF, AF, MK; HS, TF, AG, LW.	Completion of text materials. Additional orientation meetings for teachers. Continuation of teaching phase and administration of Specific Criterion tests. Administration of socio-economic questionnaire.
7	April - June 1964	HLS, HJS, HG, JG; WKT, SDF, MK, AF; HS, TF, AG, LW.	Completion of teaching phase, administration of Specific Criterion tests and final General Criterion battery. Scoring of tests. Proposal for continuation of project submitted.

*Not including occasional consultants; see below, 0.5.2.

Quarter	Date	Personnel*	Activities
8	July - September 1964	HLS, HJS, JG, HG, NPH; WKT, SDF, MK; AG, WDY, LW.	Administrative arrangements with schools for 1964-1965 experiment. Scoring and tabulation of results of tests from 1963-64 (for computer processing). Revision of teaching materials.
9	October - December 1964	HLS, HJS, HG, JG, NPH; WKT, SDF, MK, AG; WDY.	Administration of General Criterion and Intelligence test battery. Continuation of revision of materials. In-service training courses for teachers new to the project. Teaching phase of 1964-65 experiment.
10	January - March 1965	HLS, HJS, JG, HG, NPH; WKT, SDF, MK, AF; WDY.	Continuation of teaching phase. Specific Criterion tests. Completion of revision of materials.
11	April - June 1965	HLS, HJS, JG, HG, NPH; WKT, SDF, MK; WDY, GT.	Completion of teaching phase; administration of Specific Criterion tests. Final General Criterion battery. Scoring of tests.
12	July - September 1965	HLS, HJS, JG, HG, NPH; WKT, SDF, AG; GT.	Scoring of tests, compilation of results for computer processing. Computer processing of all 1963-64 and 1964-65 data completed. Composition of report on Cooperative Research Project 1856 for Commissioner of Education.

0.4. Physical Facilities.

Space accomodations for Cooperative Research Project 1856, provided by the State University of New York at Buffalo, were not made available to the project until February, 1963. The accomodations consisted of a complex of offices at 46 Winspear Avenue, Buffalo, New York, to which the Buffalo English Linguistics Project nameplate was affixed. These quarters were occupied until June, 1965, when the University provided other accomodations at 3272 Main Street, Buffalo.

Facilities on hand at Buffalo English Linguistics Project headquarters have included desk space, telephone facilities and a small library for the use of project staff and office employees*; stationary and other office supplies; and the following equipment: a Smith-Corona typewriter, model 410; a Smith-Corona typewriter, model 250, which has been specially adapted for the use of linguistic symbols; a Gestetner mimeograph machine, model 320; a Gestetner fluoroscope. A Bell and Howell T.D.C. tape recorder was kept at project headquarters, on loan from the Department of Anthropology of the University. An Underwood-Olivetti D 24 calculator was also borrowed from the Physical Anthropology laboratory of the Department of Anthropology for use during the final two months of project research.

All special equipment acquired by the State University of New York at Buffalo for the purpose of facilitating Cooperative Research Project 1856 remains at the disposal of the university at the termination of the contract period.

Standardized tests and answer sheets, used in administering the General Criterion battery, were purchased in sufficient quantity for the use of all subjects included in the two years of experimentation. A repository of approximately 100 copies of each of the following tests, together with approximately 6000 answer sheets for each, was established at project headquarters: S.T.E.P. Writing tests,[1]

---

*There was at all times a part-time secretary, with additional clerical assistants hired on an hourly basis as needed.

[1] available from the Educational Testing Service of Princeton, N. J.

Level 1, Level 2, and Level 3; Iowa Test of Educational Development, Test 3;[1] Lorge-Thorndike Intelligence Tests, Level 5, form B and Level 4, form B;[2] and the Modern Language Aptitude Test.[3]

Through the cooperation of the Computing Center of the State University of New York at Buffalo, Dr. S. David Farr, the Project Statistician, submitted the body of data compiled from the testing phase of Cooperative Research Project 1856 to computer analysis, using an I.B.M. 7044-1401 combined system of analysis.

0.5. School systems and individual educators have worked in cooperation with the Buffalo English Linguistics Project, both in direct involvement in the research project--providing groups of students as experimental or control subjects--and in various other ways, as consultants or advisors.

0.5.1. Cooperating schools. The following schools have participated during one or both years of the experiment.

(a) Akron Central High School, Akron, New York; Edward Allen, principal. Experimental classes in both 1963-64 and 1964-65. In the first year the participating teacher was Roger Farr; in the second, Arthur George.

(b) Amherst Central High School, Snyder, New York; Donald Munson, principal. Sue Updike was teacher of an experimental class in the 1963-64 year. Amherst Central High School only continued two months in the research project, and thus does not figure in the results.

---

[1] available from Science Research Associates, Chicago, Illinois.

[2] available from Houghton-Mifflin Company, New York, New York.

[3] available from the Psychological Corporation, New York, New York.

(c) Bishop O'Hern High School, Buffalo, New York; Sister Agnes Clare, principal. Provided experimental classes taught by Miss Marion Crowe, and control class taught by Mrs. Elizabeth Murphy, in 1963-64 only.

(d) Bishop Turner High School, Buffalo, New York; Rev. Robert Schwab, principal. Participant in 1963-64; experimental classes taught by Father John Weimar and Father Claude Bicheler, control classes under Father Francis Braun and Father Vincent Wright.

(e) Canisius High School, Buffalo, New York; Rev. Louis A. Mounteer, principal. Participant in both 1963-64 and 1964-65; in the first year, experimental classes taught by Thomas Fitzsimons and Edward Zimmerman, and control classes taught by Sylvester Kuligowski and Kenneth Durkin. In the second year, one experimental class taught by Thomas Fitzsimons.

(f) Clarence Central High School, Clarence, New York; Clifford N. Crooks, principal; Herbert Bosch, chairman of English Department. Provided control classes for the 1964-65 experiment, taught by Lawrence Szymanski; comparison linguistic classes* under Michael Ehrenreich and Patricia Speyser.

(g) Gates-Chili Senior High School, Rochester, New York; Warren Sarley, chairman, English Department; John Bema, principal; took part in the 1964-65 experiment; experimental class taught by Pamela Patton, control classes taught by Mary Ann Bell and Charles Dispenza.

(h) Griffith Institute and Central School, Springville, New York; William W. Sawin, Jr., principal. Provided experimental classes for the 1963-64 experiment, taught by Henry Bartkowski, Betty Snethen, and Helen Knueppel.

(i) Kenmore Junior High School, Kenmore, New York; George Cookingham, principal. In 1963-64, provided control classes taught by Robert Hall and L. Ann Bish.

(j) Kenmore West Senior High School, Tonawanda, New York; Raymond Frazier, principal. In 1963-64, provided control classes taught by Marian Williams and Virginia Zimmerman.

(k) Medina Central High School, Medina, New York; David Parsons, principal. A participant in both years of project research; in 1963-64, control classes taught by Mr. Jerry D. Wright, Mrs. J. R. Brundage and Donald Sleight; in 1964-65, control classes taught by Mr. Jerry D. Wright and Jerome Flax.

---

*These two teachers administered the General and Specific Criterion tests in order to compare the effectiveness of their own linguistically-derived approach with that of the B.E.L.P.

(l) Niagara Falls High School, Niagara Falls, New York; Russell Grauer, Principal. In 1964-65, experimental classes taught by Glen A. Smith.

(m) North Tonawanda Senior High School, North Tonawanda, New York; Earl Tonner, Principal. Participated in 1964-65, with experimental class taught by Roger Farr, control class by Sarah Cipriano.

(n) Rush-Henrietta High School, Rochester, New York; Charles Kinyon, Principal. In 1964-65, experimental classes taught by Helen Arnold, control classes by David Sisson and Larry Emond; did not administer final General Criterion battery, so records are incomplete.

(o) Saint John Fisher College, Rochester, New York; Rev. Joseph B. Dorsey, Dean. In 1964-65, experimental classes taught by Julian Granberry (B.E.L.P. staff member).

(p) State University College at Buffalo, Buffalo, New York. Experimental classes in 1964-65 taught by Henry J. Sustakoski (B.E.L.P. staff) and Edmund J. Thomas.

(q) State University College at Fredonia, Fredonia, New York. In 1963-64, experimental class taught by Zack Bowen, control class by William Neville. The full program was not completed, so results are incomplete.

(r) State University College at Geneseo, Geneseo, New York. In 1963-64, experimental classes taught by Edween Ham and Gilbert David.

(s) Williamsville Junior High School, Williamsville, New York; Lyman Root, Principal. Participant in both 1963-64 and 1964-65; in the first year, experimental classes taught by Dorothy Rizzo and Ruth Berner; in the second year, experimental classes taught by Dorothy Rizzo.

(t) Williamsville Senior High School, Williamsville, New York; Clifford N. Crooks, Principal in 1963-64, and William W. Sawin, Jr., Principal in 1964-65. Participant in both years of project; in 1963-64, experimental classes taught by Doris Shearer and Vincent Stearns; and in 1964-65, experimental classes taught by Harold Stein and Doris Shearer.

(u) State University of New York at Buffalo, Buffalo, New York. In 1964-65, experimental class taught by Gayle N. Thomas. The full program was not completed, so results are incomplete.

0.5.2. Scholars not directly involved as staff members of the Buffalo English Linguistics Program, who have been called upon for consultation and other assistance, on an occasional basis, are:

Dr. Robert Ascher, Department of Anthropology, Cornell University; Consultant and Lecturer in general orientation program for teachers.

Dr. Sumner Ives, Department of English, Syracuse University; Consultant and Lecturer in general orientation program.

Dr. Ralph Maud, Department of English, State University of New York at Buffalo; Lecturer in orientation program for control-group teachers.

Mr. Bruce Miller, Assistant Professor of English and Education, State University of New York at Buffalo; Consultant in teacher orientation program.

Dr. W. Melville Ransberry, Toronto Teachers College; Consultant and Lecturer in orientation program for control-group teachers.

Dr. David B. Stout, Professor of Anthropology, State University of New York at Buffalo; Consultant in teacher orientation program.

1. Justification of linguistic approach.

1.1. Need for a new approach. The classic curriculum in the field of English had consisted for many decades of the three main divisions of (1) the study of the English language (traditional grammar), (2) a program in composition and (3) the study of English and American literature. During the 1930's, the study of language was seriously attacked. Some studies were conducted to determine the effectiveness of the study of grammar in the improvement of student writing. The results of these studies indicated no positive relationship between a knowledge of traditional grammar and the ability to write with facility. This was not, or at least should not have been, unexpected. English grammar, and often even the points of usage, were taught for their own sake and no special effort was made to associate the teaching of grammar and the teaching of composition. There has still been no determination of the effectiveness of grammar in the improvement of composition if grammar was to be intimately involved in the composition program. It may well be that what was called for was an improvement in the way grammar was used in the attempt to improve composition. No test of this kind of hypothesis was ever made. Instead, it became the new orthodoxy that the teaching of grammar was somehow out of fashion and teaching composition by writing practice alone was in fashion. Of course many schools never accepted this new philosophy and continued to teach grammar in the rather traditional way. This was more generally true in the Catholic educational system.

By the time of the beginning of the Buffalo English Linguistics Project, it was difficult to find schools in the immediate geographic area with a sufficient program in traditional grammar to act as controls in the experiment. For this and other reasons, Catholic parochial schools in the city of Buffalo were selected to participate in the program. In the case of other (non-Catholic) participating schools, the use of grammar as a base for teaching composition was stressed in the in-service training of control teachers.

But a second major point to consider in the reaction against the teaching of grammar is the abandonment of the teaching of a description of language for purposes other than as a means to improve the composition program. Most subject matter in the curriculum is justified in terms of its value in the over-all educational development of an individual rather than on a pragmatic one that it will help students do some practical activity better immediately. Biology, for instance, is taught for its value to an individual in aiding him to understand his physical environment and it is left to the health program to apply the facts of biology to the improvement of student health practices. Chemistry is also taught for its general educative value, without any necessary application in the better mixing of bread batter, though this may become a concern in a home economics classroom. It is the position of the Buffalo English Linguistics Project that English teachers abandoned a major part of their legitimate subject matter when they abandoned the teaching of the facts about the nature of language for the sake of general educational values. Language is the first and greatest of all human inventions. It makes all other disciplines possible. Is any further justification for the teaching of a description of language needed?

But the assumptions of the Buffalo English Linguistics Project do not rest on the justification that grammar has a part in the general educative scheme alone. There is also the conviction that if modern scientific analysis has allowed us to make startling discoveries about the nature of language and its functions, then this knowledge should be applicable to the problems involved in the use of language. Therefore this Project was set up to test this hypothesis:

that a knowledge of the scientific analysis of the English language will lead to a program which can better handle the traditional problems of the English composition program than a program based on the traditional, unscientific, analyses of language. In addition, a scientific description of language will make a much greater contribution to the students' understanding of the world he lives in.

In this regard, then, the English program must function on two basic levels. It must try to contribute to a student's general understanding of the world he lives in through the study of literature and through the study of a description of language, and it must be a skills course in the improvement of composition through the application of its own subject matter and through writing practice.

1.2. Why a linguistic approach.

A statement of the basic philosophy of the contribution of linguistic science to the teaching of English as viewed by the Buffalo English Linguistics Project, is appropriate. First, it is NOT expected that linguistics can cure all of the multitude of problems of English instruction. As anyone who has taught English very well knows, a basic problem of teaching people to write better is the one of interesting and motivating them sufficiently to be self-critical of their own efforts. Achieving this kind of motivation is extremely difficult with a teaching load so great as to make individual attention almost impossible.

A key problem that the teacher must face, then, is sufficiently interesting students in their writing to make them truly self critical. Most writers of any competence achieve this kind of interest at some point in their careers. A few who are fortunate acquire this kind of ability for self analysis while still high school students. Many do not achieve it until they are in college, or very frequently, even in graduate school. Most Americans never develop a high ability for written expression.

In regard to the basic problem of writing competence, linguistics can contribute relatively little without the presence of some self-motivated interest in writing. Where motivation is largely lacking, the selection of particular approaches to English instruction becomes of little consequence. Of course, the task of the English teachers in trying to awaken this kind of self interest might be infinitely easier if, in our total educational view, teaching people to become literate, in more than a very minimal sense, was of equal importance to teaching people how to operate automobiles. Driver instruction is carried on in extremely small groups and driver training teachers are very fortunate in that only a few people can sit in one car. This means that in driver training, instruction is always in very small groups and largely on an individual basis.

It is not necessary to spell out for teachers of English what measures could be accomplished, using any approach, if they had such an extremely fortunate teaching load. As long as it is our tradition that English instruction can be carried on in a mass production situation, maximum results cannot be expected, in terms of the high degree of literacy all teachers would like to maintain as a standard of achievement. Occasionally, in the public school situation, a few students are fortunate enough to become involved in writing seminars and workshops which enable them to have daily writing practice and criticism. Almost invariably, students in these situations achieve higher degrees of literacy than students taking only traditional instruction. Students, faced with heavy writing involvement, generally are fortunate enough to achieve at an early age the self criticism which is the basis for building a high proficiency in self expression.

There has been, in recent years, a great and eternal complaint about the lack of literacy in high school graduates, in college graduates, and even among inmates of graduate schools. This has, most often, been blamed directly on the inadequacy of the composition program in college, or most frequently on the incompetency of the high school English teachers. Paul Roberts, among others, argues that this is absurd. He argues that it is the responsibility of the whole school to teach literacy, not of the English department alone. The English department has been viewed as a service department. English has been thought to have no subject matter so English teachers could worry about making students literate while other departments could teach legitimate subject matters, because, after all, they had them. What the English teacher must demonstrate for his colleagues in other departments is that it is everyone's function to promote literacy. Of course, too often, the English teacher will find many of his colleagues have not sufficient mastery of language usage themselves to be able to do this. Where that is true, the problem is beyond the scope of the English department to correct.

In large measure the problem has developed as we have attempted to educate progressively greater portions of the public, quite often beyond their native capacities. If it is our belief that a high school diploma, or even a college degree, should indicate that a student is basically literate, then diplomas or degrees should be withheld from anyone failing to attain such a standard. What school system is prepared to enforce real literacy as a standard? If we do not have the real belief in this value, sufficient to maintain it, then the English teachers are guilty of being obsequious if they allow the failures of the educational authorities to maintain standards to be registered as their personal incompetency. If we believe in offering education to all, even beyond their

There has been, in recent years, a great and eternal complaint about the lack of literacy in high school graduates, in college graduates, and even among inmates of graduate schools. This has, most often, been blamed directly on the inadequacy of the composition program in college, or most frequently on the incompetency of the high school English teachers. Paul Roberts, among others, argues that this is absurd. He argues that it is the responsibility of the whole school to teach literacy, not of the English department alone. The English department frequently has been viewed as a service department. English has been thought to have no special subject matter so English teachers could worry about making students literate while other departments could teach their legitimate subject matters, because, after all, they had them. What the English teacher must demonstrate for his colleagues in other departments is that it is everyone's function to promote literacy. Too often, of course, the English teacher will find many of his colleagues have not sufficient mastery of language usage themselves to be able to do this. Where that is true, the problem is beyond the scope of the English department to correct.

In large measure the problem has developed as we have attempted to educate progressively greater portions of the public, quite often beyond their native capacities. If it is our belief that a high school diploma, or even a college degree, should indicate that a student is basically literate, then diplomas or degrees should be withheld from anyone failing to attain such a standard. What school system is prepared to enforce real literacy as a standard? If we do not have the real belief in this value, sufficient to maintain it, then the English teachers are guilty of being obsequious if they allow the failures of the educational authorities to maintain standards to be registered as their personal incompetency. If we believe in offering education to all, even beyond their ability to profit by it, then we must be prepared to accept that these individuals will survive their involvement with the educational process and will leave it enriched only to the degree that their native talents will permit. This is not an argument against public education, nor a plea to restrict higher training. It is only an argument urging educational policy makers to face reality; to acknowledge that miracles are not possible and that we have not found the means of raising every individual to the level of a highly educated and highly articulate person.

The English department does have a legitimate subject matter. It is not sociology, it is not personality adjustment and it is not guidance. The legitimate function of an English program is to transmit the body of knowledge about the language and the literature to students. When other considerations have been introduced, these two have been sacrificed. Let the chemistry department teach students what clothing to wear to an interview. Let the English department teach students the linguistic facts about their native language and introduce them to the eloquent expressions of gifted users of the language, both in times past and in the present day.

Linguistics, we feel, provides a more useful frame of reference which any student who has achieved a basic interest in his writing can then use as a foundation for self criticism in striving for writing improvement. The structural approach cannot provide motivation where motivation does not exist, and this frequently cannot be awakened in the kind of situation that exists in many schools. But once some motivation has been inspired, linguistics can then provide a better framework for self evaluation and improvement in this vital area so commonly recognized as an essential ingredient of a truly educated person--the ability for expression with clarity and force. We believe that a greater awareness of how language actually functions can contribute to this self-educative process, to the degree that an individual is ready for it.

This is in contrast to the traditional situation where no two handbooks agree on the conventions of punctuation and where the rules are so frequently expressed in such vague and complicated language that they are impossible for average students to understand. We also feel that linguistic analysis has a contribution to make in understanding the complexities used by a subtle and gifted poet. In contrast to traditional metric analysis, which reduces the reading of the finest poetry to doggerel, in order to make an analysis, this system allows the most natural reading of a poem as a basis for prosodic analysis. It is also possible through this method to make explicit what "counterpoint" in poetry may mean or what a New Critic actually means, structurally speaking, when he speaks of "hovering stress" in a poem. It has been a basic assumption of New Criticism that structure will lead to meaning. The linguists agree, and in fact they provide a tool where the exact nature of this structure may be made readily apparent and where the genius of a poet may be seen in all of his fine and gifted manipulations of the language.

We also feel that a linguistically-based grammar will provide a logical, accurate, and consistent description of the English language, and that this is going to be a practical guide to kinds of usage problems with which English teachers are traditionally concerned.

The distinctions between descriptive and prescriptive grammar are important to bear in mind, for the linguist, when he is making an analysis, is not concerned with the problem of what is considered elegant or inelegant usage. He is rather concerned in making a description, not in making value judgments. It is not only proper, however, but it is the proper responsibility of the English teacher to be concerned with presenting the student with a knowledge of the kinds of constructions which will earn him the title of an educated person in our society. That is, after all, the student's purpose in being in school. Descriptive grammar is the basis upon which a prescriptive grammar may be developed, one that will be more useful in making the kinds of distinctions that have always been the legitimate and proper concern of English teachers. Some people prefer to discuss this distinction as a dichotomy between grammar and usage. They are then using the term grammar only in the descriptive sense, and the term usage to refer to that which is considered acceptable, in contrast to unacceptable usage. Whatever terms are used to make this distinction, it is important to keep the functions separate. Grammar is not only what is considered "proper" -- it is an attempt to describe how language functions. And knowledge of how language functions is the proper concern of every student who aspires to know those things about the world which are necessary for everyone to know. We do not restrict information about botany or zoology only to those people who will use it as physicians or druggists. We feel that any student, even in elementary school, should have some knowledge about the natural world. Language is the basic tool that allows man to carry on his culture -- it is the one thing which has allowed him to become human. It is also true that a thorough knowledge of the structure of the language will be useful in determining which usages are considered "educated" and which are considered "illiterate". This does not mean that those that bear the label "illiterate" do not have grammatical structure - in truth they have as much grammatical structure as the finest Shakespearian sonnet. What they lack is the social designation of acceptability, and the eloquence of a gifted mind.

As linguistic knowledge progresses, linguistics should be able to make contributions in such areas as the analysis of literary style, a more accurate semantic connotation and denotation of meaning, etc. At this time the rigorous science of linguistics has not progressed to the point where much can be said in these areas with a high degree of confidence; but, as in all areas of science, new breakthroughs are being made every day, and in the definitely foreseeable future, these areas will be subjected to the kind of analysis which has been applied in describing the phonology and morphology of English.

1.3. Aspectual Analysis: Its Nature and Use

1.3.1. Premises Behind the Hypothesis.

In the foregoing sections we implied certain goals as germane to high school and college freshman English courses. These were:

(1) acquisition of a thorough knowledge of the structures of the English language and of the English writing system (two separate, though related entities)

(2) acquisition of a thorough knowledge of the historical backgrounds and development of these structures

(3) acquisition of the ability to use this descriptive and historical information within the framework of the American Standard Dialect

(4) acquisition of an insight into the workings of language and writing systems as media of communication

In section 1.1. it was stated that the general nationwide lack of student proficiency in these areas may have stemmed, at least partially, from the fact that currently used analyses of English -- regardless of the pedagogical devices used to present them -- are not capable of realizing these goals. The reason for this lies in the fact that most models of English structure are largely intuitive. They do not consider all the data of the language nor do they consider data in a methodical manner. It is consequently not possible for the student to take such incomplete, inconsistently presented data and use it to reach the four goals outlined above.

Since it is considered axiomatic in our society today that the scientific method is the most thoroughly organized system of logical analysis currently available, it was premised that presentation of English language data via a scientifically designed model ought to remedy some of the ills of the currently used models. Since the field of linguistics is solely concerned with the analysis of language according to the dictates of the scientific method, it was also premised that a linguistic model was what was needed.

All of these premises were subsumed under the following hypothesis, which became the hypothesis that the Buffalo English Linguistics Project set out to verify or refute experimentally.

> Pedagogical devices being equal, presentation of a linguistically derived model of English in the classroom will better enable the student to reach the four major goals of instruction than will presentation of intuitive, non-linguistic models of English structure.

1.3.2. Model and Pedagogy. It was initially necessary to clarify the distinction between an instructional model and a pedagogical system and the place that linguistics has with respect to these two ideas. Most laymen and educators both think of linguistics as a pedagogical system. It should be stated at the outset, however, that this assumption is unwarranted, that linguistics is not a method of language instruction. It is not, in other words, a pedagogical system in any sense. It is, rather, a medium of instruction, a body of analytical knowledge presented in model form which may be taught by any pedagogical device deemed proper. The various "linguistic approaches" involve both a linguistic model of the language in question and appropriate pedagogical devices for imparting the model to the student. The primary aim of the Buffalo English Linguistics Project was not to devise and test a pedagogical system. It was, rather, to devise and test a specific linguistic model under all possible pedagogical situations.

1.3.3. Linguistic Models. We have already stated that any model of the structures of a language which is not strictly based upon the methods of scientific data gathering and analysis is not, by simple definition, a linguistic model. From this viewpoint none of the various traditional models of English are linguistic models. They are models of language, and in many instances they may be rather accurate and even very thorough, but, by definition, they are not linguistic. If we are rejecting all such non-linguistic models on the basis of the assumption that they are in no case as complete and as concise as linguistic models, we must automatically decide, then, not to concern ourselves with the possible use of any of the traditional models of English.

A second kind of language model which we will also reject from consideration simply because it is not a linguistic model, is the transformationalist model. This model of language is not scientific for precisely the same reasons that traditional models are not scientific. The transformationalist, by his own admission, states that the only complete analysis of a language can be made by a native speaker, that the native speaker may then serve as his own informant. As has been aptly put by one recent critic, "I can see, however, no more point in linguists trying to generate utterances and then evaluating what they have done than in botanists trying to generate trees and then deciding whether the result is a tree or a monstrosity" (Wallace L. Chafe, "Phonetics, Semantics, and Language," Language, vol. 38, no. 4, p. 340, December 1962). As another critic puts it: "It (transformational grammar) lacked a scientific approach and was detached from language itself. It was a mathematical and largely normative discipline, far removed from actual observation, and its scope was both too limited in some respects and too wide in others." (R. M. W. Dixon, Linguistic Science and Logic, 1963, p. 88.) In short, the transformationalist or generative school of language analysis, though again providing us with a language model, does not concern itself with data gathering, with experimental verification or refutation of the data gathered and with ordered consideration of all the data as it actually occurs. If a model does not do these things, it is not, by definition, scientific and, therefore, again by definition, not linguistic.

If we reject both traditional and transformational models of language as not being linguistic and therefore not scientific, we are left with two other choices as source for our analytical model. One choice may be found in the structural school of language analysis. This school is definitely linguistic in the sense that it utilizes in full measure the steps of the scientific method. It does not suit our purposes, however, in the sense that it has no holistic philosophy behind it. Most structuralists have used a scientific, but unilinear, approach. They have given linguistic definitions of phonological systems, of grammatical systems, or of meaning systems. It has been very rare that a structuralist has worked out and presented a full analysis of a language, considering patterns of sound (phonology), form (morphology), and sense (semology).

The second choice we are left with is the aspectual or stratificational school of language analysis. This school is historically an offshoot of the structuralists, and it follows the same scientifically based methodology. Its difference lies in the fact that it insists upon a holistic viewpoint of language. It insists that no language model is complete -- and therefore scientifically truthful -- unless it considers sound, form, and sense data in all their complexity. Because of their commitment to this holistic viewpoint -- holistic while still emphasizing the importance of all the details -- the aspectual system was the one chosen by the Buffalo English Linguistics Project to test the hypothesis made earlier in this section. Within the aspectualist school, the precise model and methodology used are those of George L. Trager and Henry Lee Smith, Jr. This model is schematically presented below. Each of the three major levels or strata of language (sound, shape, sense) is sub-divided into three smaller levels for analytical purposes. In the diagram the units studied and symbols for units on each of the nine sub-levels are indicated in parentheses below the name of the analytical level.

The Aspectual Model

LANGUAGE

PHONOLOGY (SOUND)	MORPHOLOGY (SHAPE)	SEMOLOGY (SENSE)
3. Phonemics (phonemes / /)	3. Syntax (syntags)	3. (Unnamed)
2. Phonetics (phones [ ])	2. Morphemics (morphemes /)	2. (Unnamed)
1. Articulatory Phonetics (accoustic features)	1. Morphophonics (morphophones •)	1. Sememics (sememes)

Each of these nine levels of analysis is further subdivided into three smaller analytical levels, making a total of 27 analytical levels.

Units on any level of analysis in such a system consist of, in various kinds of relationships, units on the immediately preceding level of analysis. It is consequently necessary that each level and its units be thoroughly and completely understood before units on the next level are looked at. The full model of the language can only be seen if the units are considered in a sequential and cumulative manner.

Full bibliographic references to this system of analysis are not possible presently, but the following will present the system in considerable detail.

1. Trager, George L., and Smith, Henry Lee Jr., An Outline of English Structure.

2. Trager, George L., Linguistics is Linguistics, Presidential Address of the Linguistic Society of America, published as an occasional paper of the journal, Studies in Linguistics.

3. Trager, George L., Linguistics, Encyclopedia Britannica.

4. Hall, Edward, The Silent Language.

5. Smith, Henry Lee Jr., "The Concept of the Morphophone," Language, Vol. 43, No. 1, March 1967, pp. 306-41.

6. Smith, Henry Lee Jr., English Morphophonics: Implications for the Teaching of Literacy, Monograph Number Ten, New York State English Council.

7. Sustakoski, Henry J., Some Contributions of Linguistic Science to the Teaching of Reading, Proceedings of 1967 Spring Institutes, NCTE.

2. General Procedures

The basic objective of the Buffalo English Linguistics Project, as stated in the original application to the Office of Education of the United States Department of Health, Education and Welfare, was to test the relative merits of the linguistically-oriented and the traditional approaches. (See Appendix 1) The modus operandi planned for meeting this objective involved:

1) paired classes of experimental and control subjects -- specifically, students in the range grades 7 to 13.

2) cooperating teachers to administer materials to the subjects at the initiation of the project.

3) parallel curricula for both experimental and control subjects, varying with grade-level but including:

(a) criterion tests to be administered to all subjects at the beginning of the experiment, as a uniform measure of intelligence and general achievement; and

(b) teaching materials covering all phases of language study; special materials developed for use with the experimental subjects should counterbalance the teaching of grammar, spelling, punctuation, etc., by traditional methods in the control classes. (Other content in experimental classes -- literature, for example, should be unchanged.)

(c) tests given [1] at intervals during the school year, to evaluate the performance of all subjects in several phases of language study (parts of speech, stress, spelling, and punctuation); and [2] at the end of the year, to measure general language proficiency.

The several steps, as outlined above, all required planning and time-consuming preparation, and were implemented with varying degrees of success; in some cases, the detailed plan as stated in the original proposal has had to be modified or supplemented.

2.1. The experimental sample.

The original proposal called for the selection of public secondary schools in urban, suburban, and rural areas, Buffalo, New York, Williamsville, a suburb of Buffalo, and rural school districts in the vicinity of Potsdam, New York were chosen as loci suitable for testing. In each of these areas, two different grade levels -- e.g., 9 and 11 -- were to be represented by approximately four school classes, paired as experimental and control subjects.

There were two early modifications of this plan, before the beginning of the 1963-64 academic year, when actual experimentation was to begin:

(1) The plan to use the Potsdam area was abandoned, as it proved impractical to provide in-service training for teachers in that area. Non-urban schools in Medina, Springville, and Akron, New York -- more accessible to B.E.L.P. staff members -- were substituted.

(2) In view of specific local conditions in the Buffalo area, it became desirable to include Catholic parochial and private schools as representative of the urban area. This was the case because -- after initial expressions of interest -- neither the Buffalo nor the Niagara Falls, New York public school system considered it possible to commit personnel and resources to the project. The Catholic secondary schools, however, which provide a large segment of education facilities in the urban areas, were able to participate in the project, providing paired control and experimental classes in three high schools during the 1963-64 year.

2.1.1. The 1963-64 sample.

The following schools participated in the in-service training programs, and were affiliated with the project during the 1963-64 academic year:

	Schools	Classes in Project			
		9ex	9c	11ex	11c
(AK)	Akron Central High School			3	
	Amherst Central Senior High School*			1*	
(O)	Bishop O'Hern High School	1	1	1	1
(T)	Bishop Turner High School	1	1	1	1
(C)	Canisius High School	1	1	1	1
(G)	Griffith Institute (Springville)	4		1	
(KJ)	Kenmore Junior High School		4		
(KW)	Kenmore West Senior High School				4
(M)	Medina High School		4		4
(WJ)	Williamsville Junior High School	4			
(WS)	Williamsville Senior High School			4	
(F-C)	State University College at Fredonia**				
(G-C)	State University College at Geneseo**				

* did not complete the full program

** college freshmen; experimental materials used, not paired with control classes

In terms of the urban - suburban - rural trichotomy, the alignment of the secondary schools included in the 1963-64 sample was seen to be as follows:*

Urban	Suburban	Rural
Bishop O'Hern H.S.	(Amherst Central H.S.)	Akron Central H.S.
Bishop Turner H.S.	Kenmore Junior H.S.	Griffith Institute
Canisius H.S.	Kenmore West Sr. H.S.	Medina H.S.
	Williamsville Jr. H.S.	
	Williamsville Sr. H.S.	

---

* The meaningfulness of the urban - suburban - rural rubrics was validated in the course of statistical analysis of the data. See Chapter 2.5.

2.1.2. The 1964-65 sample.

During the second year, in which experimentation was continued under an additional grant by the Office of Education, some of the schools included in the original sample terminated their participation in the project; certain other school systems or individual teachers expressed a desire to participate. An effort was made to solicit the participation of control classes to balance new experimental classes. However, the emphasis in the second year was on improvement of materials and other aspects of curriculum, and no particular effort was made to maintain the socio-economic distribution factor.

The following were participants during the 1964-65 academic year:

Schools	Classes in Project							
	9ex	9c	10ex	10c	11ex	11c	12ex	12c
(AK) Akron Central High School							4	
(C) Canisius High School	1							
(Cl) Clarence Central High School								4**
(G-Ch) Gates-Chili Senior High School						3	3	
(M) Medina Central High School		5						4
(NF) Niagara Falls High School			3		1			
(T) North Tonawanda Senior High School			1	1				
(RH) Rush-Henrietta High School			1	1	1	1		
(WJ) Williamsville Junior High School	5							
(WS) Williamsville Senior High School								4*

(SJ-C) St. John Fisher College***
(B-C) State University College at Buffalo***

---

* One of the four classes did not complete the 1964-65 year as a participant.

** This was actually one large class, divided into four recitation sections.

*** College freshmen - experimental materials were used.

For comparison to the 1963-64 alignment, the schools are listed in the same categories (though this division was not used as a variable in 1964-65):

Urban	Suburban	Rural
Canisius High School	Clarence Central H.S.	Akron Central High School
Niagara Falls High School	Gates-Chili Senior H.S.	Medina Central High School
	North Tonawanda Sr. H.S.	Rush-Henrietta High School
	Williamsville Jr. H.S.	
	Williamsville Sr. H.S.	

2.2. The in-service courses.

2.2.1. The Linguistic In-service Course.

Because, in 1962, teachers in general were ill-informed as to what "linguistics" was -- not to mention knowledge of linguistic analysis -- it was felt necessary to give teachers a basic introductory course in linguistics before they could undertake an experiment using linguistic materials. The selected school systems agreed to a year's training program which would precede their actual participation in the project. The schools selected for the experimental (linguistic) portion of the year of participation in the project were Akron Central School, Amherst High School, Williamsville Junior and Senior High Schools, Springville High School, Bishop Turner, Bishop O'Hern and Cardinal Dougherty High Schools.

Four separate in-service courses were set up to service these schools. One of these courses met at Williamsville Junior High School, to service teachers from Williamsville Junior and Senior High Schools, and some of the Akron teachers. Another course was set up at Amherst, for the Amherst teachers; and one at Springville, for the Springville teachers and the rest of the Akron teachers. The fourth course was held at Bishop Turner High School to service the Bishop Turner, Bishop O'Hern and Cardinal Dougherty teachers. Teachers from Canisius High School, a private Catholic school, also attended this course in anticipation of participation in the project in another manner.

Due to varying administrative complications which had to be cleared at the different schools, the courses commenced at different dates. All of the courses actually met from 30 to 45 classroom hours. Below is a typical outline of the material covered.

I. Definition of Linguistics
    A. Historical Development
        1. From philology
        2. Modern anthropological approach
    B. Debt to missionaries for data on languages of the world

II. Language in the anthropological setting
    A. The concept of culture
    B. The Sapir-Whorf Hypothesis
    C. The Speech Package
        1. Paralanguage
        2. Kinesics

III. The phonological structure of English
    A. Vowels
    B. Consonants
    C. Supra-segmentals
        1. Pitch
        2. Stress
        3. Juncture
    D. Phonemic Theory
        1. Contrasts
        2. Complementary Distribution
        3. Pattern Congruity

IV. The morphological structure of English
    A. Morphophonics
    B. Morphemics
        1. Word Segments
            a. Suffixes
            b. Postbases, sub-bases, etc.
        2. Word Types
            a. True words
            b. Phrase words
            c. Word Phrases
    C. Syntax
        1. Linguistic vs. traditional grammar
        2. Fries word-order grammar
        3. Smith Syntax
            a. Binary phrases
            b. Syntactic relations
            c. Principal constituents
        4. Transformations as a dimension of Syntax-Semology

V. Applied Linguistics
    A. The sound system and the graphemic system
        1. Phoneme-grapheme correspondence
        2. Morphophone-grapheme correspondence
        3. Types of spelling exercises based on the morphophone-grapheme correspondence
    B. Punctuation and Intonation
        1. Punctuation as a stylistic device related to intonation
        2. Punctuation conventions unrelated to intonation

VI. Semological analysis of English
    A. The relation of structure to meaning
    B. Isolatable units in semology
    C. Approaches to semological analysis

VII. Applications
    A. Attitudes toward correctness
    B. Usage
    C. Rhetorical devices based on a syntactic and semological analysis
    D. Structural approaches to literature
        1. Literary devices
        2. Literary style
        3. Prosody

VIII. A look to the future

IX. Other areas of applied linguistics
    A. Contributions to foreign language study
    B. Contributions to English as a foreign language
    C. Contributions to the psycho-therapeutic interview

This basic course was taught by Principal Investigator Sustakoski. It was supplemented by occasional Saturday meetings, which brought all experimental groups together, to hear guest lectures by Professors David B. Stout, on the Concept of Cultures; Henry Lee Smith, Jr., on the Sapir-Whorf Hypothesis and on Syntax; Sumner Ives, on Syntax; Wilmer Trauger, on Applications and Attitudes on Correctness; and Robert Ascher, on the Human Invention of Language.

The following is the bibliography used in this in-service course.

I. Linguistic Source Material. The following is a list of some of the basic theoretical works in linguistics. It is far from an exhaustive list.

1. Trager, George L. and Smith, Henry Lee, Jr. An Outline of English Structure, Studies in Linguistics Occasional Papers No. 3, Department of Anthropology, State University of New York at Buffalo, Buffalo, New York 14214

2. Fries, Charles Carpenter, *The Structure of English*, Harcourt, Brace and World, Inc., New York.

3. Chomsky, Noam, *Syntactic Structures*, Mouton & Co., S-Gravenhage.

4. Mandelbaum, David G., editor, *Selected Writings of Edward Sapir in Language, Culture and Personality*, University of California Press, Berkeley and Los Angeles.

5. Whorf, Benjamin Lee, *Language, Thought and Reality*, The Technology Press and John Wiley & Sons, 1956.

6. Trager, George L., *Paralanguage: A First Approximation*, Studies in Linguistics, Volume 13, Department of Anthropology, State University of New York at Buffalo.

7. Trager, George L., *Phonetics: Glossary and Tables*, Studies in Linguistics, Occasional Papers No. 6., Department of Anthropology, State University of New York at Buffalo.

8. Bloomfield, Leonard, *Language*, Henry Holt & Co., New York.

II. Recommended reading for teachers and administrators.

1. Lloyd, Donald J., and Warfel, Harry R., *American English in its Cultural Setting*, Alfred A. Knopf, New York. Good introduction to the scientific study of language.

2. Dean, Leonard F., and Wilson, Kenneth G., *Essays on Language and Usage*, Oxford University Press, New York. Compilation of discussions on linguistics and the teaching of English from various points of view, by various people.

3. Allen, Harold B., Editor, *Reading in Applied English Linguistics*, same comment as for number 2, above. The second edition is especially recommended.

4. Smith, Henry Lee, Jr., *Linguistic Science and the Teaching of English*, Harvard University Press, Cambridge, Mass. Recommended as a general introduction to the field.

5. Hall, Edward T., *The Silent Language*, Doubleday & Co., Inc., Garden City, New York. A thorough discussion of paralanguage and kinesics, based on an analysis by Hall and Trager.

6. Hockett, Charles, *A Course in Modern Linguistics*, The Macmillan Co., New York. College level introduction to the scientific study of language. Uses the Smith-Trager phonology.

7. Hill, Archibald A., *Introduction to Linguistic Structures*, Harcourt, Brace & World, Inc., New York. College level introduction to linguistics. Uses the Smith-Trager phonology.

8. Hall, Robert A., Jr., Linguistics and Your Language, Doubleday & Co., Inc., Garden City, New York. A popular introduction to the systematic study of language.

9. Francis, Nelson, The Structure of American English, (with chapter on dialects by Raven McDavid), The Ronald Press Co., New York. A good comprehensive analysis of the structure of English. Uses the Smith-Trager phonology.

10. Sauer, Edwin H., English in the Secondary School, Holt, Rinehart and Winston, New York. Good discussion of problems and issues in the teaching of English including some ideas on the potential contribution of linguistics.

11. Hall, Robert A., Sound and Spelling in English, Chilton Co. - Book Division, Philadelphia and New York. An analysis of the many ways in which one sound in English is spelled and the many sounds that one symbol sometimes represent. A concise, tabular treatment.

12. Whitehall, Harold, Structural Essentials of English, Harcourt, Brace & World, Inc., New York. Discussion of punctuation is recommended reading for all school people.

13. Warfel, Harry R., Language, Howard Allen, Inc., Cleveland.

14. Sledd, James, A Short Introduction to English Grammar, Scott, Foresman & Co., Chicago, etc.

15. Marckwardt, Albert H., American English, Oxford University Press, New York.

16. Buchanan, Cynthia, A Programmed Introduction to Linguistics, D. C. Heath and Co., Boston. A good reinforcement for some of the areas and concepts presented in the workshop. Self-teaching.

17. Bloomfield, Morton W., and Newmark, Leonard, A Linguistic Introduction to the History of English, Alfred A. Knopf, New York. Recommended.

18. Gleason, Henry A., Introduction to Descriptive Linguistics (and workbook), Holt, Rinehart and Winston, Inc., New York. The best general introduction to linguistics. Uses Trager-Smith phonology. The workbook is highly useful.

III. Materials usable in the classroom.

1. Roberts, Paul, Patterns of English, Harcourt-Brace, New York. Recommended for junior or senior high. Excellent treatment of phonology (Trager-Smith) and word order grammar (Fries).

2. Roberts, Paul, Understanding English, Harper & Row, New York and Evanston, Illinois. Includes workbook. Recommended for 12th and 13th year. Same comment as above except that it contains more traditional Freshman Handbook materials.

3. Dashwood-Jones, Donald, Patterns for Writing, Books 1 and 2. W. J. Gage Limited, Toronto. Recommended for junior high. Good treatment of word order grammar (Fries).

4. Williams, Ralph M., Phonetic Spelling for College Students, Oxford University Press, New York. Recommended for remedial spelling for upper level high school students and college freshmen.

5. Hall, Frances, Twenty Steps to Perfect Spelling, Bantam Books, New York. Remedial speller suitable for junior-senior high school and adults.

6. Hall, Frances and Brenes, Eleanor H., Spelling Patterns, Linguistica Co., Ithaca, New York. Junior high speller.

2.2.2. To offset the so-called Hawthorne Effect,[1] it was decided that an in-service training course had to be devised for teachers participating in the control aspects of the experiment. After interviewing several candidates, Austin McC. Fox, head of the English department at the Nichols School in Buffalo, was selected to prepare and give this course to the control teachers. He would also act as control consultant to the project. As was the case with the in-service course in linguistics, this course was made available to all of the English faculty at the control schools. The schools which participated as the control sources during the 1963-64 academic year were Kenmore Junior and Senior High Schools, Medina Central School, Bishop Turner High School, Bishop O'Hern High School and Cardinal Dougherty High School. Two control in-service courses were set up for the teachers from these schools. One was held at Kenmore West High School, to accommodate the teachers from the Kenmore system, Bishop Turner, Bishop O'Hern and Cardinal Dougherty, and one was set up at Medina to accommodate the Medina teachers.

The course met for an equivalent number of sessions as the linguistic in-service course. Below is a topical outline of the material covered.

OUTLINE OF COURSE BASED ON A TRADITIONAL GRAMMAR APPROACH TO THE TEACHING OF ENGLISH IN SECONDARY SCHOOL.

15 Lessons

I Composition
    Ways to teach composition
    Ideas in composition
    Standards in grading
    Kinds of composition

---

[1] The Hawthorne effect refers to the effect of special attention given to some type of behavior as in itself reinforcing that behavior. Thus, the purpose of the in-service course for control teachers was to counter-balance the reinforcing effect of the course for linguistic-group teachers.

II Composition
  - Logic in composition
  - Induction
  - Deduction
  - Analogy
  - Parts of compositions
  - Follow-up

III Composition
  - Theme-a-week concept
  - Long Papers
  - Bibliography

IV Grammar
  - Parts of Speech
  - Phrases, verbals
  - Clauses, sentences

V Punctuation
  - Rules based upon traditional grammar

VI Spelling
  - Traditional rules
  - Syllabification
  - Compounds

VII Vocabulary
  - Methods of teaching vocabulary
  - Use of dictionary
  - Use of other reference books
  - Language influences
  - Levels of language

VIII Kinds of Criticism
  - Aristotelean, Aesthetic
  - Freudian, Marxian, New, etc.

IX The essay and non-fiction

X The short story
  - Crane, Hemingway, Salinger, etc.

XI The novel and the epic
  - Conrad, James, etc.
  - The Iliad and The Odyssey

XII The drama
  - Oedipus, Hamlet, Caesar
  - Dramatic criticism
  - Modern theatre
  - Theatre of the Absurd

XIII Poetry
    Methods of teaching
    Use of recordings
    New Criticism in poetry
    Traditional and Modern Poetry

XIV Poetry
    Yeats, Eliot, Frost, etc.
    Analysis of poetry

XV Summary
    Attitudes
    Process
    Motivation

BOOKS USED IN COURSE IN TRADITIONAL GRAMMAR APPROACH TO THE TEACHING OF ENGLISH IN SECONDARY SCHOOL.

The Harper Handbook of Composition

William Strunk, Jr., and E. B. White, *The Elements of Style*

Locke, Gibson, and Arms (eds.), *Toward Liberal Education*

Fox (ed.), *Maggie and Other Stories by Stephen Crane*

Conrad, *Victory*, *Heart of Darkness*, *Secret Sharer*

Sophocles, *Oedipus*

Shakespeare, *Hamlet*, *Julius Caesar*

James, *The Turn of the Screw*, *Daisy Miller*

Untermeyer, *Modern British and Modern American Poetry* (Revised edition)

2.3. Preparation of teaching materials.

Text materials of the project were planned concurrently with the development of the in-service course and materials for cooperating teachers. Thus the original Outline of Materials, drawn up in September, 1963, showed the units as a natural consequence of, and roughly parallel to, the chapters for teachers:

OUTLINE OF MATERIALS AND UNITS (September 1, 1963)

I. History of the English language (Control teachers may include a unit at their option, if available)
   a. The development of English from early sources to modern times
   b. Brief history of the study of language
      1. Traditional
      2. Modern-linguistic

II. Areas of linguistic study that have significance in the modern world
   a. Linguistic approach to foreign language study
   b. Speech science and speech therapy
   c. Unit on a linguistic approach to effective speaking (Optional for experimental group)

III. The anthropological setting for language
   a. The concept of culture
   b. How language affects our view of the world
   c. The human communication package
      1. Language
      2. Paralanguage
      3. Kinesics
   d. The invention of language
   e. The significant design features of language as contrasted with other communication systems

IV. The phonological structure of English
   a. Segmental phonemes
   b. Suprasegmental phonemes

V. Pronunciation and spelling
   a. The basic situation in English
   b. Drill exercises designed to improve spelling habits, based on major patterns of spelling

VI. Normative placement of accent
   a. A sensible attitude toward correct placement of accent
   b. Drill exercises

VII. Punctuation and intonation
   a. Comparative relationship
   b. Intonation as an aid to punctuation
      1. Drill exercises

VIII. Prosody (Optional unit for experimental teachers)
   a. Basis of the linguistic system of metric analysis
   b. Unit giving sample analysis of poems
      1. Information available through this approach

IX. The structure of English
   a. Exercises in the analysis of English morphemics
   b. Exercises in the analysis of English syntax
   c. English semology

X. Application of syntax and semology to style
   a. Exercises to develop greater flexibility in style
   b. Presentation of basic notation system for evaluation of student compositions

The writing of the units followed that of the chapters simply as a matter of logistics: the latter were needed first. There was also the problem of securing a writing staff with sufficient experience in both linguistics and English. The writers who spent the summer of 1963 on materials to be placed in use in the cooperating schools that fall included the project director himself, a teacher of both linguistics and English (HJS); a linguist who had written widely at various levels (JG); the coordinator of English in two progressive central school systems (HS); a teacher of English methods, language, and literature (HG); and a secondary teacher of English and speech (AG).

2.3.1. 1963-64 Text

The original outline was adhered to generally, except that Unit V, Normative Placement of Accent (originally VI), was placed before Unit VI, Pronunciation and Spelling (originally V), and original Unit IX was divided into separate units, VIIIa, Morphemics, and VIIIb, Syntax. The above four units and the one on the application of Syntax and Semology to Style approximate the areas which were to be taught and tested out by both experimental and control groups.

As the materials took shape, it became increasingly evident that their sheer extent might well preclude covering them in a single year. Consequently, Units III, the Anthropological Setting of Language; VIII, Prosody; and II-C, Linguistic Approach to Foreign Language Study, were omitted; and Chapters I, Our Developing Language and Chapters II-D, Public Speaking Activities and Interpretation, and II-C, Speech Science, were made optional. In most of the experimental classes the historical unit was used as a quick stepping stone to the linguistic materials, but the two speech units were not taught.

Two of the Phonological Units (IV and IV-B) were found to be substantially complete and applicable, requiring only minor adjustments and added practice material. To Unit V, Normative Stress, a section on dialect was prefaced. A preliminary simplified section on word segmentation was included, partly as an aid to the lower level classes.

Unit VI, Spelling, was divided into three rather distinct parts: An introduction demonstrating the reasons for present spelling difficulties in English, a treatment of morphophonic correspondences, and a brief treatment of existing spelling "rules" in relation to new linguistic discoveries.

The Unit on Punctuation (VII) represented the most comprehensive application of a linguistic approach to an aspect of English yet devised.

The Units on Morphemics and Syntax (now numbered VIII-A and VIII-B) were as complete, for purposes of instruction, as those on phonology, though in some aspects not entirely worked out to their logical conclusions. It was impossible to complete the planned treatment of semology, as anticipated research in this complex field did not keep pace with the project's time table.

Unit IX, Meaning, Usage and Style, comprehended actually only the first two, with a concluding section on the relation of structure to composition. A detailed treatment of the nature and make-up of the dictionary was also included.

2.3.2. 1964-65 Text

Even before application was submitted for a year's renewal of the project, it had become apparent that (1) a single year's teaching and testing of the materials was not conclusive, and (2) the materials themselves could be improved, especially specific units, and should be changed in sequential ordering.

The summer of 1964 and portions of the 1964/5 school year were spent in revising the text accordingly. The final result was bound volumes one and two, here included as Appendix 2. Since these are the final texts used evaluatively in the project, a more detailed description of them and the rationale behind them seems in order. The description follows the order of the table of contents of the two volumes:

VOLUME ONE

THE SETTING OF ENGLISH

I. THE SETTING OF LANGUAGE

II. OUR DEVELOPING LANGUAGE

THE SPEECH PACKAGE

III. THE SOUNDS OF ENGLISH

IV. PARALANGUAGE AND KINESICS

V. EFFECTIVE ORAL COMMUNICATION

THE SHAPES OF ENGLISH

VI. MORPHOPHONICS: THE STRUCTURE POINTS OF ENGLISH WORDS

VII. MORPHEMICS: THE STRUCTURE OF ENGLISH WORDS

VOLUME TWO

VIII. PRONUNCIATION AND SPELLING

IX. SYNTAX: THE STRUCTURE OF ENGLISH SENTENCES

X. THE SUPRASEGMENTALS AND PUNCTUATION

MEANING AND USAGE

*XI. SEMOLOGY: STRUCTURAL SIGNALS AND USAGE

XII. MEANING AND COMPOSITION

* XIII. EFFECTIVE WRITING

*XIV. PROSODY

---

*Units projected but not completed for distribution.

VARIETIES OF LANGUAGE STUDY

*XV. APPROACHES TO LANGUAGE STUDY

GLOSSARY OF TERMS

In the new version, the unit originally projected as Unit III, on the anthropological setting of language, became the foundational one (Unit I). Included in it are added sections on (1) the concepts of language, dialect, and standard dialect; (2) the scientific methods; and (3) a statement of the linguistic method of this project and book as an example of scientific method.

The second unit (originally the first) is that on "Our Developing Language." Deleted are the opening section of the possible origins of language and the concluding speculation on the possibility of a world language. The entire focus is now on the gradual, general, and systematic development of English as exemplary of all language development, presented in terms of the sound, shape and sense concepts developed in the subsequent units. The coverage of American English has been strengthened. A brief history of language study has been taken out of the continuity and made a separate section. Maps, time lines, and a series of historical examples have been added.

These two units together comprise the first of five larger parts, The Setting of English. The second of these parts is entitled The Speech Package and includes Units III, IV and V on "The Sounds of English", "Paralanguage and Kinesics", and "Effective Oral Communication." Units III and IV are generally unchanged from the earlier version, except for the addition of more exercise material. Unit V also contains added exercises, and represents some change in

---

* Units projected but not completed for distribution.

orientation from a fairly usual approach to public speaking, in the original Unit II-B, to a more linguistic approach to oral composition -- a shift in orientation that admittedly needs further strengthening.

The Shapes of English is the third major division of the current text. It replaces the previous Unit V on Normative Placement of Accent with a thorough treatment of Morphophonics (Unit VI), followed by an expanded treatment of Morphemics (Unit VII, the earlier VIII-A), both prefacing a thoroughly revised Unit on "Pronunciation and Spelling" (Unit VIII). The new arrangement is sounder sequentially. Also, the treatment of spelling is now preceded by a general introduction to the nature of the English writing system as morphophonic rather than imperfectly phonemic. Theory and practice then are treated along three morphophonic pattern lines -- regular, residual, and non-native -- at work in traditional spelling rules, particularly as found in generally recognized "spelling demons."

The Shapes of English section is rounded out by the Units on Syntax and Punctuation (IX and X), a more logical reversal of their earlier order. The Syntax unit is expanded, providing a look at the three levels of syntax, but requiring mastery of only the first, with a simplification of the second and third into a single line. Exercise material has been augmented here, as throughout.

Unit X, "Punctuation," has adopted, as organizing principle, the four functions of punctuation described by Harold Whitehall. These functions include (1) separation of sentences or parts of sentences; (2) linking words or groups of words; (3) enclosing words or groups of words; and (4) indicating omission of letters, figures, words, or groups of words. Much exercise material has been added. Some treatment of morphemics and syntax is presented again -- once anticipatory but now reinforcive.

The Unit XII on "Meaning, Usage and Composition" has been revised to demonstrate the concurrence and interweaving of structural signals and sense, and also to establish, semi-inductively, the syntactic structures of the basic reasoning patterns (arranging, choosing, defining, etc.) These need ultimately to be introduced entirely in terms of their structural functions. This unit is intended to serve as a basis for subsequent consideration of composition and rhetoric.

The materials as a whole carry out the premise of the project staff that any language -- here English -- functions as a systematic totality which can be analyzed systematically. A corrollary is the idea that after mastery it is an habitual totality through imitation. In youth, the users of a language can best improve their mastery through theory and practice based on that totality -- from smaller to larger elements, in a cumulative expansion and refinement. Therefore, a cumulative conceptual mastery of English structure should, by appropriate application, result in increasingly effective mastery of its use, both habitual and deliberate.

Needless to add, the text also serves as a thorough sequential presentation of the English language that belongs in the general knowledge of any educated speaker. The total text is quite comprehensive and therefore (even without the omitted units) beyond a year's work for most secondary students, considering the usual literature requirements. This fact points to a necessary breakdown of the materials by aspects of subject matter and levels of students.

2.4. Testing

2.4.1. The test data to be gathered, as outlined in the original proposal, included the following:

A. General criterion data. Originally, it was proposed to use the Sequential Test of Educational Progress (STEP); The Iowa Test of Educational Development -- Test 3, Correctness and Appropriateness of Expression (ITED), and the Differential Aptitude Test (DAT). All three of these are standardized objective tests. The DAT was indicated as a test of usage, including grammar, punctuation and style; the ITED also as a test of usage. The STEP test, described as a writing test, includes questions on usage and writing style. These three tests comprised a battery to be given to all students initially and terminally in the academic year, as a measure of general proficiency in English.

It was also hoped, in the planning stage of the project, that use could be made of student compositions, graded with the cooperation of the Educational Testing Service of Princeton, as a measure of writing ability. This possibility was investigated but was felt to be too costly; it was originally thought that the Educational Testing Service would be able to give financial support to this phase of testing, but such proved not to be the case.

One major change which was made in the General Criterion battery was the adoption of the Modern Language Aptitude Test, developed by Dr. John Carroll of Harvard University and designed to evaluate sensitivity to language structures (phonological, morphological, and syntactic) as a correlate of aptitude for foreign-language learning. The MLAT was included on the assumption that this sensitivity is a correlate of all language learning, and that the development of this factor is an aim of both traditional and experimental instruction in language.

Having added the MLAT to the General Criterion battery, the DAT was omitted. This was done both because of redundancy (the content overlap of the DAT with the STEP and ITED) and because of the obvious necessity to keep the total battery to a manageable period of time.

The combined General Criterion and Intelligence Test Battery (MLAT, STEP, ITED and LT/VB) was to be administered initially in the school year in a four-hour session. The terminal battery (MLAT, STEP, ITED), to be given at the end of the school year, required approximately three hours.

B. Intelligence Data. As mentioned above, the Lorge-Thorndike Intelligence Test, Verbal Battery, was to be administered initially in the school year to all subjects. Scores on this test, together with Socio-economic and attitude data (see 2.5.) were to be used in describing the sample.

C. Specific Criterion Data. Spelling, punctuation, placement of stress, and identification of parts of speech were specified as areas of English study for which parallel tests should be developed for use in comparing experimental and control subjects. These tests were to be given in each class in three phases: before a particular unit of study, as a "pre-test"; immediately after each unit, as a "post-test"; and approximately two months after that, as a test of retention.

This series of tests was to be developed by the Buffalo English Linguistics Project staff, drawing upon such resources as the New York State Regents examinations and other recognized tests of English achievement, with the specific instructions for each test to be geared to the classroom approach used in the experimental classes on the one hand, and the control classes on the other.

2.4.2. The 1963-64 testing program followed the specifications of the original proposal with minor changes. The General Criterion and Intelligence tests were administered as planned. In the Specific Criterion series, spelling and placement of stress were combined in the first of three (rather than four) diagnostic tests; the series used consists of:

(Experimental Classes)	(Control Classes)	
D1-2	D1a-2a	Spelling and Normative Placement of Stress
D3	D3a	Punctuation
D4-5	D4a-5a	Identification of Word Segments and Word Types

This ordering was used for pre-tests and post-tests, which were given between December 1963 and May 1964, according to the teaching schedule of the various instructors. A general retention test covering the subject matter of all three pre- and post-tests -- punctuation, spelling, stress and word-parts -- was given late in the academic year. (see specimen copies of all tests, Appendix 3).

2.4.2.1. The Diagnostic and General Retention Tests.

A. D1-2, D1a-2a: Spelling and Normative Placement of Stress.

It was found convenient to combine these two units in testing. Pre-tests and post-tests follow an identical plan -- part I consists of 100 spelling words, dictated by the instructor both as isolated items and in context; part II includes 50 sentences, each with an underlined word in which the student is asked to indicate the syllable with strongest stress.

It was not necessary to prepare separate tests for experimental and control groups; an identical pre-tests - post-test series was administered to all classes.

B. D3, D3a: Punctuation. Separate pre-tests and post-tests were developed, each containing two parts: Part I. Interior punctuation, with 50 sentences; and Part II. Interior and Terminal punctuation, a continuous paragraph for punctuation and capitalization.

The same text series was given to experimental and control subjects.

C. D4-5, D4a-5a: Identification of Word Segments and Word Types. Separate pre-tests and post-tests consist of two sections: Part I. Word Segments, containing five sentences in which roots, prefixes, suffixes and inflectional endings must be identified; and Part II. Word Types, with nine sentences in each of which the number of simple, expanded and compound words is to be indicated.

Parallel tests, containing the same sentences but with different explanatory material, were written for experimental and control classes.

The content of tests D4-5 and D4a-5a is a departure from the original plan to include a test of parts of speech as the fourth unit in the series. It is a departure which was considered necessary because many of the experimental classes were unable to complete the syntax units of the text -- a necessary preliminary to linguistic identification of parts of speech.[1] A test based on an earlier test unit, morphemics, was substituted. This unit covers material which is crucial in the linguistic approach, but apt to be considered marginal in most traditionally-based English courses. Control teachers were asked to increase their coverage of word segmentation accordingly, but this coverage was obviously uneven. The test series D4-5, D4a-5a is thus admittedly a compromise.

---

[1] The time factor, as it developed, was important throughout the project; it will be discussed more thoroughly in analyzing the results.

D. The General Grammar Retention Test. The time factor, again, conditioned the substitution of the General Retention test for individual retention tests for each of the Diagnostic tests. The General Retention test is a single test, like the Diagnostic tests in being administered in a single class period, consisting of two sections. The first section is a page-long reading passage in which three operations are to be performed by the students: (a) punctuation and capitalization must be added; (b) stress is to be marked for ten words which are indicated; (c) misspelled words are to be underlined and corrected. The second section contains a list of fifteen words which the student is asked to segment.

The same General Retention test was given to experimental and control classes.

2.4.2.2. The Testing Calendar.

A month-by-month resume of the testing calendar for 1963-64 is given below, indicating when the various tests were actually administered in the participating schools. It will be noted that not all schools used every test, particularly the higher numbered diagnostic tests (it will also be noted that many classes were unable to complete coverage of the instructional materials).

September, 1963

Initial battery: Am, T, G, G, A, W-J, M, O*

October, 1963

Initial battery: Am, T, G, A, W-J, M, O*

November, 1963

Initial battery: K-W, C*, K-J

---

* Not all classes were tested.

December, 1963

Initial battery: C*

Pre- D1-2/D1a-2a: K-J, M, T

Post-D1-2/D1a-2a: K-J, T

January, 1964

Pre-D1-1/D1a-2a: G, K-W

Pre- D3/3a: K-J

Post- D1-2/1a-2a: M*, K-W

February, 1964

Initial battery: G-C, C*

Pre- D1-2/1a-2a: C*, O, T*, A

Pre- D3/3a: T, G, K-W

Post- D1-2/1a-2a: M*

Post- D3/3a: K-W

March, 1964

Pre- D1-a/1a-2a: W-J, C*, G-C

Pre- D3/3a: T

Post- D1 C*, O, G, A, T*

Post- D3/3a: T

April, 1964

Pre- D1- T*, W-S*

Pre- D3/3a: A

Pre- D4-5/4a: A, T*

Post- D1-2/1a-2a: M*

Post- D3/3a: M, O, A

---

* Not all classes were tested.

May, 1964

Pre- D1-2/1a-2a: W-S*
Pre- D3/3a: W-J, G-c
Pre- D4-5/4a-5a: O, T, G, K-J, K-W, M
Post- D1-2/1a-2a: W-J, W-S*, C*, G-c
Post- D3/3a: W-J, C, G, G-c
Post- D4-5/4a-5a: O, T, A, K-W
General Retention: C, T, G, W-J, A, K-W, O, K-J
Final Battery: G, A, T, O, C, K-W, M, K-J

June, 1964

Final Battery: W-J, W-S

2.4.3. *The 1964-1965 testing program* followed the same general routine, but again with several minor changes, based on the experiences and insights gained in the first year of testing and teaching. The initial General Criterion and Intelligence battery was administered as in 1963-64. In most cases all the included tests were given in a single four-hour session. The relatively lengthy S.T.E.P. was omitted from the terminal General Criterion battery, after preliminary analysis of the previous year's results indicated a general redundancy of the S.T.E.P. and I.T.E.D. scores; eliminating this test made it possible to give the final battery in a two-hour session -- a change which met with the approval of all the participating schools. The final General Criterion battery, then, consisted of the M.L.A.T. and the I.T.E.D.; the Attitude Questionnaire was administered in the same session.

---

* Not all classes were tested.

The 1964-65 testing program involved a completely new set of Specific Criterion instruments. The concept of triple testing of each category of subject matter with a sequence of pre-test, post-test, and the retention test was found to be, in practice, cumbersome; it can be seen by examining the 1963-64 testing calendar (2.4.2.) that toward the end of the academic year several classes received one or more post-tests and the general retention test within the same month. Since, for reasons having to do with the normal sequence of subject matter, some of the post-tests must inevitably be given late in the year, it was felt that there is probably insufficient time lapse to make the third test in the sequence meaningful as a retention test (the ideal time might be at the end of summer vacation). Therefore, such a test was not given in 1964-65.

As an effort toward further cutting down the proliferation of tests,[1] a singly general pre-test was administered at the beginning of the academic year. Four diagnostic post-tests were developed, for use during the year at times appropriate for the individual classes. The same tests were given throughout to experimental and control classes. The Diagnostic series is:

D/1/65	Spelling
D2/65	Punctuation
D/3/65	Parts of Speech
D4/65	Sentence Structure

2.4.3.1. The General Pre-test and Diagnostic Tests.

A. The General Pre-test is a single test requiring the subject to perform four different operations, each corresponding to one of the four diagnostic tests given later in the year. The test consists of a continuous reading passage in which (1) punctuation and capitalization must be added; (2) 12 misspelled words are to be identified and corrected; (3) 10 words are to be labeled for part of speech; and (4) 10 words are to be labeled for sentence part.

---

[1] The proliferation of tests was particularly alarming in certain schools where tests given for the present project were added not only to testing which was a part of regular school work but also to testing connected with one or more additional research projects. In one case it was found that some of the same standardized tests were given in the same year to some of the same subjects by two research projects! This situation, which admittedly is serious enough to consider in evaluating test results, will be mentioned again in Sect. 3.2.

B. D1/65: Spelling. This test consists of 100 words, dictated by the instructor as isolated items and in context. The format is the same as the spelling section of the earlier D1-2/1a-2a.

C. D2/65: Punctuation. This test, again, is comparable to the earlier Punctuation test, D3/3a. It contains two parts, I. Interior Punctuation, with 50 sentences to be punctuated, and II. Interior and Terminal Punctuation, a continuous paragraph for punctuation and capitalization.

D. D3/65: Parts of Speech. This test is new in plan and unlike any given in 1963-64. The subject -- in both experimental and control classes -- is asked to identify 75 isolated words "as you have learned to identify them in your English class this year." For the linguistically-taught classes, this test is designed to measure the effect of the text units on morphemics, in which specific affixes are indicated as markers of particular parts of speech; students in control classes would simply apply the more traditional criteria for identification of parts of speech.

E. D4/65: Sentence Structure: This test, too, covers material which was not included in the first year's testing. It consists of two sections, I. Word Identification, in which the student is asked to identify words as parts of speech according to their use in the sentence in which they occur. In this case, for the linguistically-taught students the test should indicate some ability to consciously use syntactic criteria in identifying parts of speech in context; the terminology learned by the experimental classes, while somewhat specialized, is coordinate with traditional terminology to a sufficient degree to make separate tests unnecessary.

The second section, II. Principal Components, requires analysis of 12 sentences into the principal components of subject, verb (predicate), and complements (a choice of five types is given). The analysis to be done is the same for all subjects -- again, the hypothesis to be tested is that use of syntactic criteria should produce increased awareness of sentence structure for the students using linguistic materials.

2.4.3.2. The 1964-65 Testing Calendar.

A month-by-month resume of the testing calendar for 1964-65 is given below, indicating when the various tests were actually administered in the participating schools. It will be noted that not all schools used every test, particularly the higher numbered diagnostic tests (it will also be noted that many classes were unable to complete coverage of the instructional materials).

September, 1964

Initial Battery: Ak, C*, T, W-J, W-S
Pre-Grammar: Ak, T, B-C

October, 1964

Initial Battery: C*, G-Ch*, RH
Pre-Grammar: C, M, NF*, RH*, W-J, W-S, SJ-C

November, 1964

Initial Battery: Cl, G-Ch*, NF**
Pre-Grammar: Cl

January, 1965

Initial Battery: M (9th)

February, 1965

Initial Battery: M (12th)**

---

* Not all classes were tested.

** Not all tests were given.

May, 1965

Post D/1: C

Final Battery: C

June, 1965

Post D/1: Ak, Cl, M, NF, RH, WS*, B-C

Post D/2: Ak, C, Cl, M, NF, RH, WS*, SJ-C

Post D/3: Ak, Cl, M, NF, RH, WS*, SJ-C

Post D/4: Ak, Cl, G-Ch, M, RH, SJ-C

Final Battery: Ak, Cl, G-Ch, M, NF, T, WJ, WS*

---

* Not all classes were tested.

2.5. Other data. In addition to testing, the Buffalo English Linguistics Project has drawn upon other sources to obtain the additional kinds of information described below.

2.5.1. Socio-economic data. As control data, to be used in describing and evaluating the performance of students in the different schools, it was proposed that a socio-economic profile of each community or other local unit -- e.g., school district -- be drawn up. This profile should include educational, financial, occupational, ethnic and other characteristics of each local area under consideration. It was felt that, among other objectives, such a profile would enable quantification of the original designation of participating school districts as 'urban,' 'suburban,' and 'non-urban.' Another objective was evaluation of the results of the study in terms of such factors as the general level of education, income, and ethnic-linguistic background of the subjects.

It was originally planned that such a socio-economic profile of each local unit should be drawn up on the basis of information from the 1960 federal census. This proved to be impractical, since census tracts were found to be not sufficiently coordinate with the school districts involved in the study.*

The alternative plan which was adopted produced a profile based solely on the segment of the school district population directly involved in the study. A questionnaire of 17 items was drawn up by the project sociologist, covering such topics as age, education and occupation of parents; language spoken in the home; family income, size, and mobility.* The questionnaire was distributed, in the spring of 1964, to all students in both experimental and control classes participating in the 1963-64 study. It was accompanied by a letter to the students' parents, requesting that they complete and return the questionnaire. All information was to be anonymous, used only to give an over-all picture of the socio-economic milieu of each participating group of subjects.

---

*A description of whole communities on this basis would, in any case, be inadequate without extensive qualification in a situation such as the Buffalo metropolitan area, which is cross-cut by public and parochial systems, plus a large number of private schools.

The questionnaire was circulated only during the 1963-64 school year, as no attempt was made to control the socio-economic factors in 1964-65.

The results of the socio-economic survey are summarized below in section 5.1., and the project sociologist's detailed analysis is included as Appendix 4.

2.5.2. Attitude data. A tool for measuring a possible motivational differential between control and experimental subjects was also developed. This has the form of a questionnaire, "Personality Types and Your English Class", consisting of 27 short (single sentence) and 13 longer (paragraph) descriptions of hypothetical individuals; for each item the subject is asked to estimate the individual's reaction to the English class in which he himself is a student.** The original version of this questionnaire, with a more extensive format, was developed by Dr. S. David Farr, the project statistician; this version was pre-tested and the items used in the final version were chosen during the first months of project research.

---

*A specimen of the questionnaire is included in Appendix 4.

**A specimen of this questionnaire is included in Appendix 5.

The attitude questionnaire was designed for computer analysis of thirteen personality factors: endurance, achievement, deference, order, exhibition, autonomy, affiliation, succorance, dominance, nurturance, change, aggression, stimulation. In both 1963-64 and 1964-65 this test was administered together with the final General Criterion battery. In 1964-65 it was tied in with the data on individual subjects and used in characterizing the subjects themselves; in 1964-65 it was taken anonymously to be used only in generalized class profiles.** Results of this questionnaire are given in Section 3.2.

2.5.3. Informal commentary. The final category of data given consideration consists of comments and criticisms made by teachers on the basis of classroom experiences and observation of their students' work. This data was gathered in meetings which the B.E.L.P. staff held with the experimental group teachers, approximately once a month in both years of the study. At some of these meetings, teachers were asked in advance to discuss classroom problems and to criticize the teaching materials on the basis of practical experience in using them. In addition, at the end of the first academic year, several teachers prepared written criticisms and suggestions, some of which contributed toward the revision of the materials. At the end of the 1964-65 year, a questionnaire was distributed to the teachers, soliciting their reactions to their one or two years of experience in the project. This body of data based on the subjective reactions of the teachers involved in teaching the experimental classes will be considered in Section 3.3.

**This change was in part an attempt to meet the objections of certain schools to administering the questionnaire in 1963-64.

3.1. Socio-economic milieu of the 1963-64 linguistic experiment.

3.1.1. Purpose. The socio-economic survey was undertaken to test for variation between the urban, suburban, and rural segments of the sample on the one hand, and between the experimental and control segments on the other. Establishment of significant variation between the school populations chosen to represent urban, suburban and rural areas would confirm the validity of this categorization as used in the 1963-64 phase of the study. Failure to find significant variation between experimental and control segments would confirm the matching of these groups for purposes of the study.

The data for the socio-economic survey consist of responses to a questionnaire distributed to parents of children who participated as subjects in the 1963-64 study (see above, 2.5.1.)

3.1.2. Treatment of data. The findings were organized under three major categories of items and treated in an approximate rank order of importance to the purposes of the project.* The problem of whether or not the school populations selected as rural, suburban, and urban were actually well classified as such was taken as one with the problem of establishing significant differences on the nine most crucial variables, which were grouped as Category I.

If the three populations were found to be significantly different for each of these nine variables or for most of them, they could be considered maximally or significantly different with respect to the socio-economic backgrounds of the children taking part in the linguistic experiment. If no overall variation were found on any item between experimental and control groups as a whole, and if, further, there were no significant variation between them within each of the three areas with reference to any (or most) variables, the two groups could be regarded as well-matched with respect to the variables. Any differences in the performances of control and experimental groups would not, then, be due to socio-economic mismatching. Whatever the results, the findings of the linguistics experiment would stand independently of differences between areas.

---

*The Project Sociologist's item-by-item analysis of the questionnaire data is included in Appendix 4.

3.1.3. Results.

(A) Comparison between experimental and control samples: After the sample was broken into rural, urban and suburban segments, responses for each of these three areas were separated into those associated with the control group and those associated with the experimental group. Then, for each area separately, experimental and control group responses were compared on every item of the questionnaire, in order to see if, in responses to these 17 items, any differences could be found which were so large that they might be a function of areal differences and not of pure chance.

It was found that for 16 out of the 17 items it was possible to accept the null hypothesis that within a given area no inter-group differences would be found that could not be a function of chance variation. The one case in which it was necessary to reject the null hypothesis was item #7, having to do with the level of income of the participants' families. In the suburban area, experimental and control groups differed so significantly that the chi square value was beyond the .001 level -- meaning that differences this large could be expected to occur by chance only once in over 1000 trials. In the rural and urban areas there was no significant difference between control and experimental groups with reference to family income.

There were other measures of group differences used in the survey, but these are the most reliable, since they issued from tables especially designed to pick up inter-group variation.

(B) Comparison of urban, suburban and rural areas. The three areas were examined for variation with respect to items listed under Category I.

Leaving control and experimental group responses mixed, responses for each of the 17 items of the questionnaire were sorted into urban, suburban and rural categories. This resulted in a table of particular response categories versus the three areas. The first concern was with the nine items of Category I which were regarded as more crucial to the rural-suburban-urban differentiation than were the others -- items 3, 4, 6, 7, 10, 11, 15 (which were not processed by the IBM computers), 16 and 17. Responses to these items were concerned with: occupational style of life (farm vs. non-farm occupational background); occupational differences, male, with social status of non-farm occupations derived by use of the Reese scale; social status of non-farm working mothers; family income; male parent's educational level; female parent's educational level; spatial mobility of family; type of home tenure; and residential stability (length of time family has lived in the same house).

Only one of the above variables did not show significant variation by area. That variable concerns the social status of non-farm occupations of working mothers, in reference to which the different areas manifested no differences which could not be explained on the basis of chance; here the null hypothesis was accepted.

On the items dealing with status of male occupation, educational levels for both male and female parents, and income, rural and urban areas were found to be very significantly similar; all variation is seen to be due to the extent to which the suburban area population deviates from that of the other two areas. Thus it is apparent that higher educational levels are strongly associated with suburban living rather than urban or rural living. This fact, as well as the other points of suburban differentiation, should be kept in mind if performance differences between participants in the linguistic experiment show up along these lines.

Concerning most of the items, overall variation by area carries over to hold for each type of group. That is, the experimental groups' responses, when classified by area, are significantly like the responses of the control groups, and both reflect the more general pattern of variation.

No significant differences by area were found for the items in Category II. These are: age of head of household; employment status of head of household (employed vs. unemployed;) family size, and number of children per family. These variables are not a function of area of residence; no significant differences were found between control and experimental groups, nor between groups on any given item with all areas combined, nor between groups within each of the areas separately considered.

Category III, items concerning language use, showed significant use of language other than English in the home. It was found that usage of foreign languages varies negatively with rurality -- that it is an urban and suburban phenomenon. Further, the languages used vary with the areas in question. For example, Germanic and Romance languages are more concentrated in the suburbs than in rural and urban areas.

3.1.4. Summary and Evaluation. A clear distinction has been found between rural and other areas. Such a definite contrast between urban and suburban cannot be drawn, and it is probable that the sample from within Buffalo is not sufficiently representative to draw a real contrast with the Kenmore and Williamsville (suburban) populations. For one thing, the urban population used is basically Roman Catholic, while the other populations would show a distribution of church affiliations more representative of the communities from which they are drawn.

Clear and significant differences between areas do appear with regard to single items, but these are not sufficient to make the areas mutually exclusive. The tendencies are strong enough to warrant the assertion that the three areas -- urban, suburban, and rural -- present real socio-economic differences. Specific points of difference, or the degree of differentiation on any specific topic, can best be seen by consulting the detailed socio-economic survey, Appendix 4.

The following table summarizes differences between the three socio-economic areas with respect to responses to the 17 different questionnaire items, showing variations of responses by type of area.

Item Number and Variable Tested	Were Differences by Area Significant?		Chief Source of Differences***
	Yes	No	
1. Age of Head		xx	
2. Employment Status of Head		xx	
3.# Style of Life	.001		Rural
4.# Social Status* of Occupation (♂)	.001		Suburban
5. Working Mothers	.01		
6.# Social Status of Occupation** (♀)		xx	
7.# Family Income	.001		Suburban
8. Family Size		xx	
9. Child Load		xx	
10.# Level of Male Parent's Education	.001		Suburban
11.# Level of Female Parent's Education	.001		Suburban
12. Use of Foreign Language in Home	.001		Each
13. Foreign Language Most Used in Home	.05 (nearly)		Each
14. Use of Foreign Language by Children		xx	
15.# Family Mobility	see Item 17		
16.# Type of Home Tenure	.001		Urban
17.# Residential Stability	.001		Each
Totals	11	6	

* Non-farm occupation, male parent

** Non-farm occupation, female parent

*** Where but one area appears in this column, it means that the other two areas were similar with respect to the item.
Where the word, each, appears, it means that each area was significantly different from each of the remaining two areas with respect to the item.

# Items of Category I, regarded as criteria variables.

3.1.5. The following summary chart supplements the statistical results of the socio-economic survey. No attempt is made here to point out contrasts; rather, this chart attempts to give a general profile of each of the areal samples.

NON-URBAN	SUBURBAN	URBAN
#1 (Age of household head) Slightly more fathers in 35-44 year than in 45-54 year bracket; very few older	Fathers about equally divided between 35-44 and 45-54 year brackets; about 8% in older brackets	More than half of fathers in the 45-54 year age group; 15% in older brackets
#2 (Employed - Unemployed)	(responses insignificant)	
#3 (Farm Occupations) About 15% of the non-urban group have farm occupations	--------	--------
#4 (Occupational Status) Greatest concentration at status levels 1, 2, 5, 7	Status levels 5, 6, 7, 8	Status levels 1, 2, 3, 5
#5 (Working Mothers)	(responses not tabulated)	
#6 (Mother's Occupation)	(responses not tabulated)	
#7 (Family Income) Main range of income \$5000 - \$9000; mean about \$7000	Main concentration \$7000-\$11,000; 10% of sample above \$21,000	Main concentration in \$5000--\$7000 range. More very high and very low than in rural sample

NON-URBAN	SUBURBAN	URBAN
#8 (Family Size)		
More families: 5 Members	More families: 4 Members	More families: 4 Members
(Little difference appears; in every case, main concentration is between 3 and 6 members)		
#9 (Number of Children)		
Number of Children: 2 - 3	Number of Children: 2	Number of Children: 2
(In every case, main range is between 1 and 4, with 10% to 15% with larger numbers		
#10 (Father's Education)		
Roughly 20% elementary, 50% high school, 20% college, 10% higher education	5% elementary, 35% secondary, 40% college, 20% higher education	About as rural sample, but slightly lower numbers in upper education brackets
#11 (Mother's Education)		
Roughly 10% elementary, 60% secondary, 20% college, over 5% higher education	About 55% high school education, 40% college, 5% higher	15% elementary, 65% high school, 20% college; higher levels negligible
#12-14 (Use of languages other than English)		
Use of languages other than English is negligible	Random selection of foreign languages in 5% of homes; little use by children	Foreign languages used in 14% of homes; Polish in 10%, also Italian, Hungarian, others. Regular use by only 3% of children
#15-17 (Residential stability, home ownership)		
High stability, about 60% have not moved in 10 years; almost half in 11-20 years. 90% home-owners	Roughly 50% have not moved in 10 years, 30% have moved once, 12% twice. Almost 95% home-owners	About 50% have not moved, 35% once, 10% twice in 10 years. 75% home-owners

4.0. Results.

4.1. One of the stated purposes of the Buffalo English Linguistics Project was the development of materials for the teaching of English using basic linguistic concepts and analyses. The result was the production of the two volume A Linguistic Approach to English (see Appendix Two), which was developed by Project personnel. The first edition, published in separate units, was used by participating schools and colleges during the first year of classroom experimentation, 1963-64. Based on observation of actual classroom use and extensive reactions by students and teachers, this text was revised and re-issued in its present two-volume form. Its bulk is too great to include as an integral part of this report, but it is on file with the U.S. Office of Education as Appendix Two to this report. A teacher's guide to the various chapters accompanies this text.

One of the unique aspects of this text is that it represents one of the first such texts to be based on an integrated linguistic analysis of the English language. It is innovative in its linguistic analysis of morphophonics, morphemics, and syntax and in the applied areas of spelling and punctuation. The chapters in which these subjects are treated are firmly based on the aspectual analysis of English phonology, which has become the analysis most widely accepted both by professional linguists and various textbook writers who have attempted to produce texts in applied linguistics. The aspectual description of phonology was the first part of this theoretical approach to a thorough description of English to have been completed. It was first published in George L. Trager's and Henry Lee Smith's Outline of English Structure. This analysis became a major part of basic linguistic texts commonly used to this day. It was the phonological approach used in Henry A. Gleason's Introduction to Descriptive Linguistics, Nelson Francis'

The Structure of American English, Charles Hockett's *A Course in Modern Linguistics*, Archibald Hill's *Introduction to Linguistic Structures*, Paul Roberts' treatment of phonology in *The Patterns of English* and *English Sentences* and such recent texts as Harold Allen's, Verna Newsome's, et al, *New Dimensions of English*. Because the aspectual analysis of English syntax was not complete at the time of publication of these texts, the various authors turned to other analyses of this dimension of the English language, primarily to the works of Charles Carpenter Fries and Eugene Nida. Later, some authors, such as Paul Roberts, turned to a transformational-generative approach to syntax and attempted to integrate this with an aspectual analysis of phonology, as in Roberts' text *English Sentences*. The Project materials are the first to present an aspectual analysis of phonology *and* of morphemics and syntax. Harold Allen's *New Dimensions of English* does present an aspectual approach to morphemics, as well as phonology; but its treatment of English morphemics does not include the treatment of English morphophonics nor the detail of treatment of morphemics that is found in the Project text. At the time of the inauguration of this project, the concept of the morphophone was only beginning to be articulated by one of the two principal investigators (Henry Lee Smith, Jr.) but the Project materials present a thorough description of this concept, nevertheless. This was followed, in the Project text, by the most detailed description of English morphemics found in any treatment of English to date. The approach to syntax is unique to this text. It represents an integration of *all* levels of linguistic inquiry culminating in an attempt to describe every dimension of the language as it actually functions. It does not restrict itself to an analysis of a single syntactic device, such as immediate constituent analysis, or word-order grammar, or an analysis of transformational processes alone, but of all of the devices that exist in the language. It is a multi-dimensional, intra-dimensional approach.

Several of the approaches found in the chapters on applied linguistics are also unique. The intonational features receive full treatment in terms of their implications for syntactic devices and for punctuation signals. Frequently, some authors have suggested that there is a relationship between "pause" and such punctuation marks as the comma. This is a gross oversimplification of the actual situation. For instance, a fairly complex subject of a sentence, one that might include a prepositional phrase, will almost invariably be followed by a "pause" before the speaker goes on to the predicate. This, incidentally, accounts for a frequent "comma error." The treatment of punctuation in the Project materials gives a much more detailed, and accurate, treatment of the relationship of intonation and punctuation. This unit was one of the most successful ones.

The approach to spelling is also unique. It is the first such approach based on the relationship of morphophone-graph rather than phoneme-grapheme. The significance of this advance can be rather simply demonstrated. There are four common pronunciations of the English word "house": that found generally in the northeastern and midwestern United States, a second common through large portions of the South, a third commonly heard in Toronto, and a fourth common to Tidewater Virginia. Though these pronunciations are binding (compulsory) on the speakers of a particular region, each speaker easily calibrates for the utterance heard in another dialect and each spells the word alike. It is through the unit of the morphophone that such calibration takes place and most of the English spelling conventions represent basic morphophone units rather than the phonemes of any particular dialect. (See Henry Lee Smith's English Morphophonics: Implications for the Teaching of Literacy.) This approach to spelling enables the student to focus initially on the regularities rather than the irregularities of the English spelling system. This unit also takes into account the three major historical influences on the development of the English spelling system.

A text was also developed for the training of teachers in basic linguistic concepts. This text did not cover every aspect of a description of the English language but chapters of it are on file with the U.S. Office of Education.

Several publishers of texts are currently interested in working with the authors in adapting these materials for larger distribution.

4.2. Test results, 1963-64. There were both some surprising and expected results from the extensive testing program undertaken by the Buffalo English Linguistics Project. The extensiveness of the testing program in itself created some problems, as will be discussed. Testing was undertaken in two major categories, general criterion and specific criterion. (See Appendix One which describes the aims of the testing program.) The testing undertaken under General Criterion attempted to measure the effect produced by a linguistic approach to the teaching of English on a student's general sensitivity to language and his command of linguistic skills and discriminations necessary in effective speech and writing. The tests used in the Specific Criterion battery attempted to measure the effects of linguistic treatment on specific skills related to general linguistic competence such as spelling, punctuation, the handling of stress, and the understanding of the composition of words, phrases and sentences in English. The basic method for experimentation that was adopted was to use matched control groups in various socio-economic settings and to compare the growth shown by students who received the "traditional" treatment. It would have been desirable, of course, to measure the effect of special treatment after a period of two, three, or more years but this was not possible at the time of the inauguration of the project. Since that time, many of the cooperating school systems have begun computerized student scheduling and would be able to hold a particular group of students together enabling the special treatment to be extended over a longer period. This would, we believe, give generally more valid results. The present results, nevertheless, merit careful examination.

One of the general criterion instruments selected was the Modern Language Aptitude Test, devised by John Carroll. This test has been widely used to identify the relative ability of students to learn languages. It was administered as a pre-test to all control and experimental groups and as a post-test to the same groups. The following charts and tables summarize the differences in the relative growth of the two groups, control and experimental, in regard to their performance on this test. Table I shows the mean test score for the total of all ninth grade experimental groups on the "pre" and "post" tests in contrast to the mean for the total of all ninth grade control groups on the pre-test and post-test scores. The F ratio, showing an analysis of co-variance, is also shown. The "pre" and "post" test scores of all individual groups -- urban, suburban, and non-urban -- are also shown. Table II gives the same data for the total of the eleventh grade groups on the MLAT test and also for the individual groups.

TABLE I

MLAT

9th GRADE

TOTAL

Exp.		Con.	
Pre	Post	Pre	Post
43.9	58.9	42.4	50.8
F Ratio			
29.5			

URBAN

Exp.		Con.	
Pre	Post	Pre	Post
46.3	57.5	41.7	54.2
F Ratio			
2.5			

SUBURBAN

Exp.		Con.	
Pre	Post	Pre	Post
50.5	65.1	44.9	49.0
F Ratio			
25.8			

NON-URBAN

Exp.		Con.	
Pre	Post	Pre	Post
39.7	51.9	41.8	47.4
F Ratio			
20.6			

TABLE II

MLAT

11th GRADE

TOTAL

Exp.		Con.	
Pre	Post	Pre	Post
53.7	65.5	56.7	62.0
F Ratio			
48.5			

URBAN

Exp.		Con.	
Pre	Post	Pre	Post
55.3	70.2	59.4	65.9
F Ratio			
35.2			

SUBURBAN

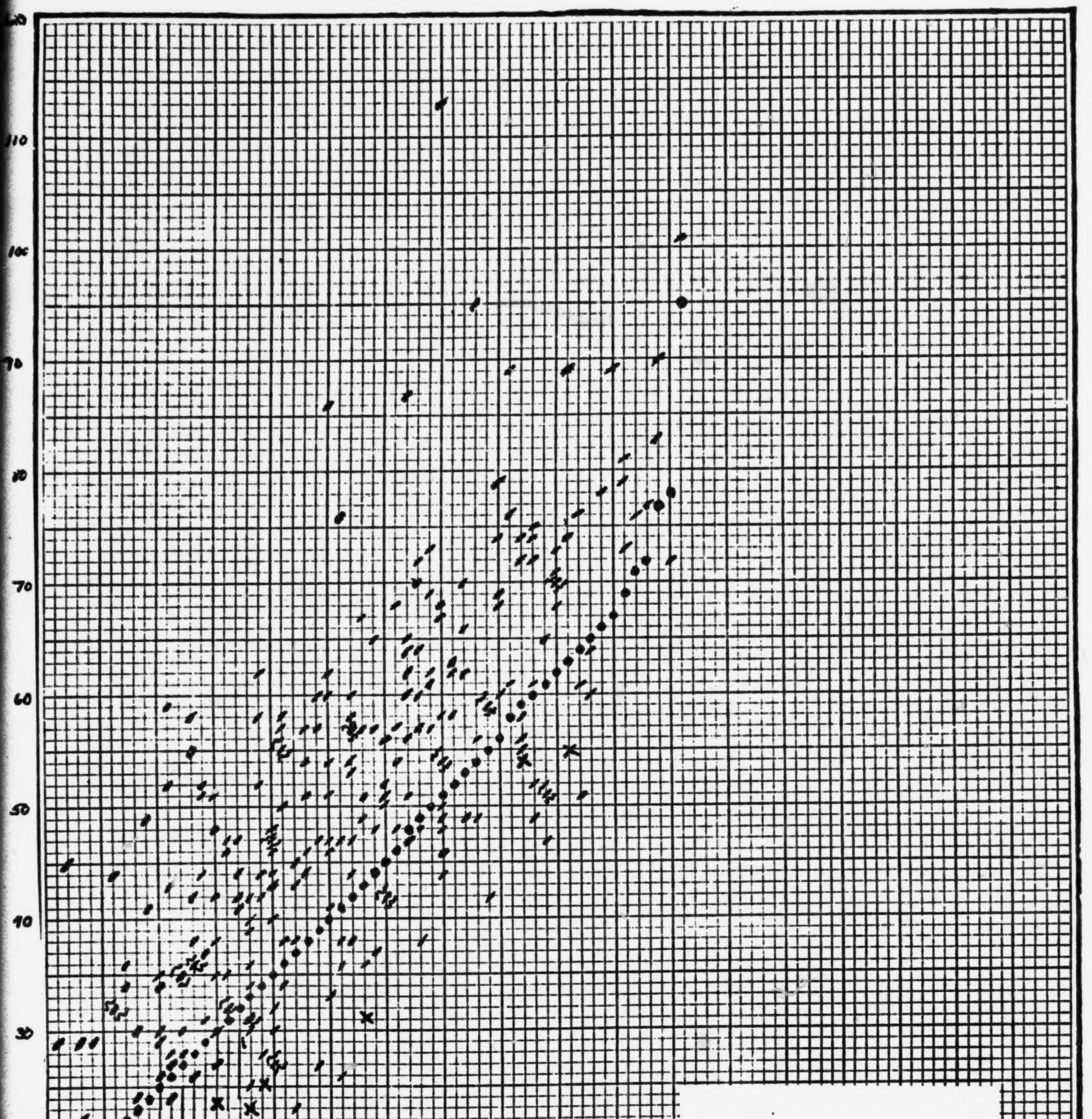
Exp.		Con.	
Pre	Post	Pre	Post
54.9	61.9	59.4	61.1
F Ratio			
7.8			

NON-URBAN

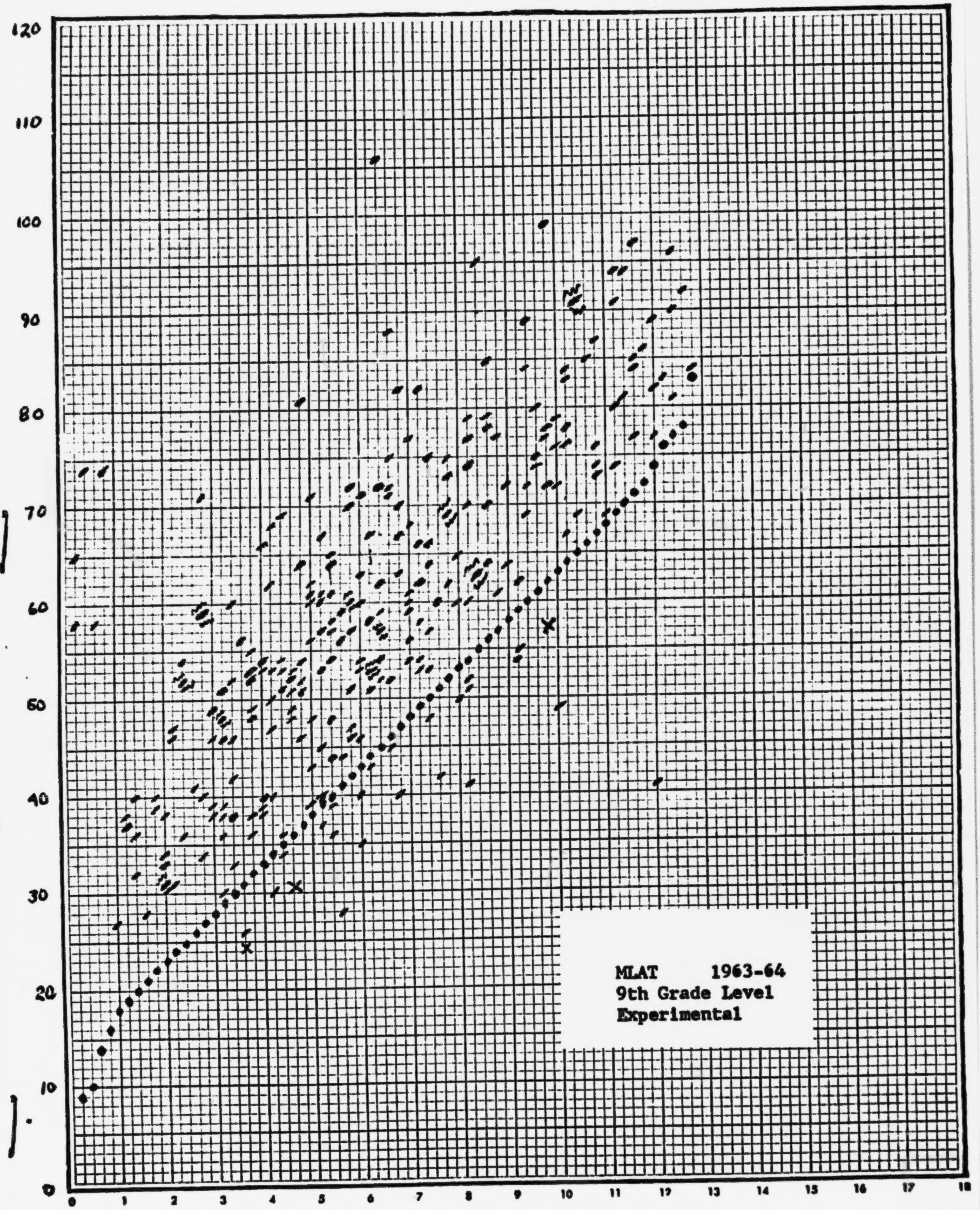
Exp.		Con.	
Pre	Post	Pre	Post
50.1	62.5	50.8	58.7
F Ratio			
7.4			

Because the results of the comparison of the experimental groups and the control groups in regard to the MLAT show the most dramatic difference, these results were the subject for the following charts. The first two charts are scatter graphs which compare the performance of the ninth grade experimental and control test groups. The ascending line of heavier squares is a simple plotting of pre-test scores arbitrarily arranged from the lowest pre-test score to the highest. On the same vertical line the slashes indicate the score of the same student on the post test. Where more than one student received the same pre-test score, several slashes will appear in the same vertical line above or below (in the case of a lower post-test score) the heavier square. An "X" below the square indicates that a student received the same score on the post test as he had received on the pre test. Two X's in the same vertical line below the square indicate that two students received that same score on the pre test and on their post test.

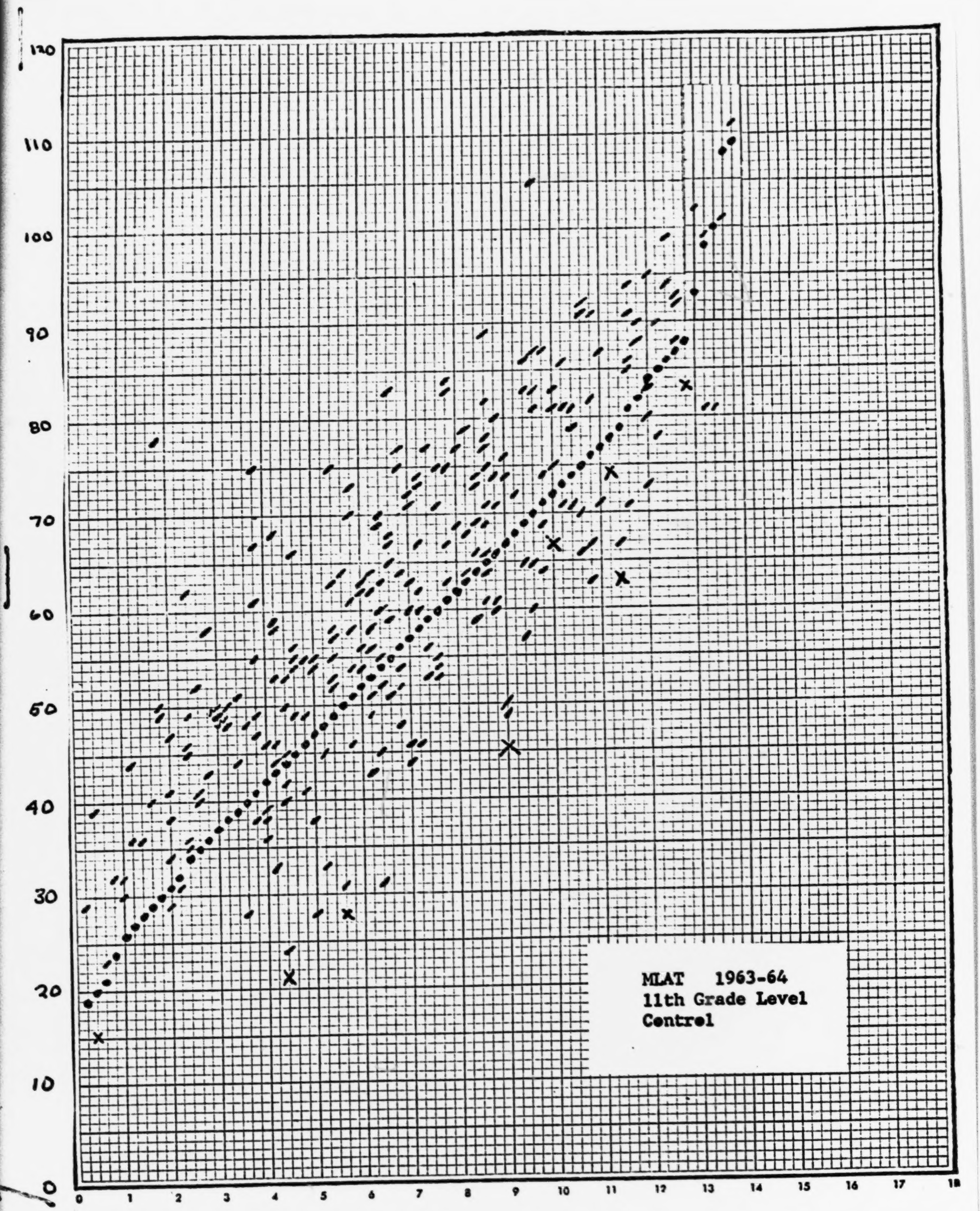
The second pair of charts are also scatter graphs of the results of the MLAT pre and post tests. They give the data for the eleventh grade experimental and control groups and were constructed on the same basis as the charts for the ninth grade results.



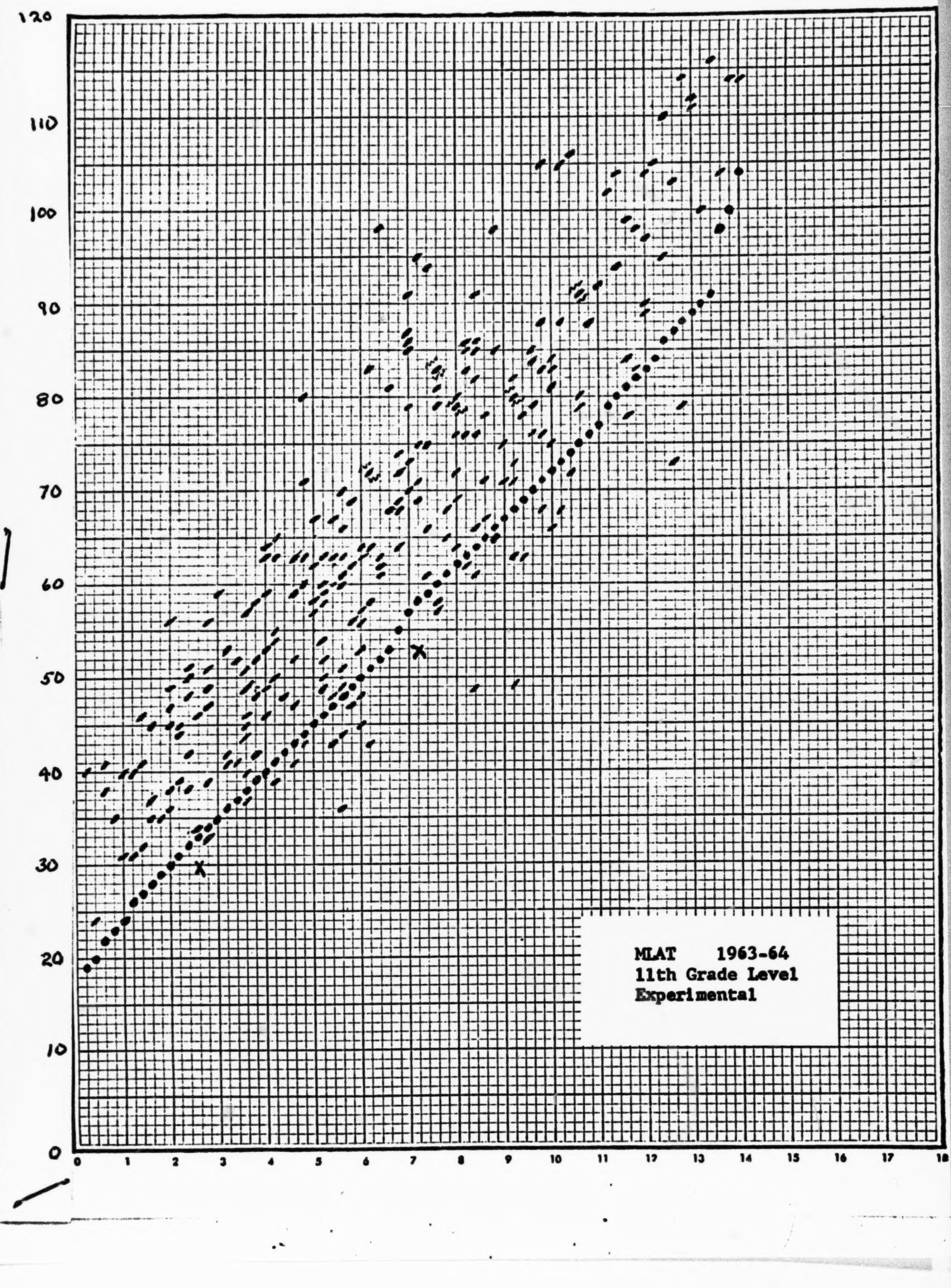
MLAT 1963-64
9th Grade Level
Control



MLAT 1963-64
9th Grade Level
Experimental

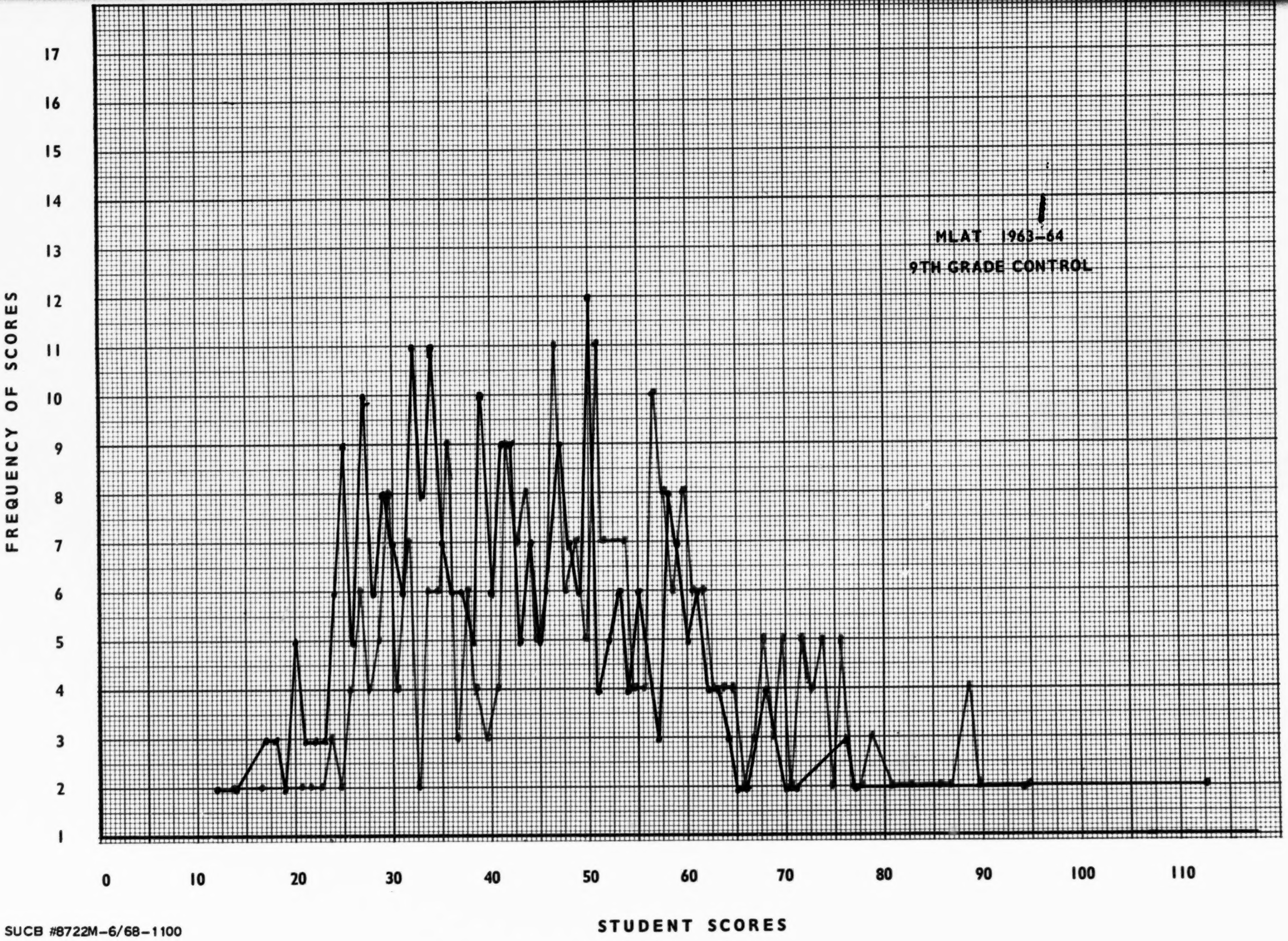


MLAT 1963-64
11th Grade Level
Centrel



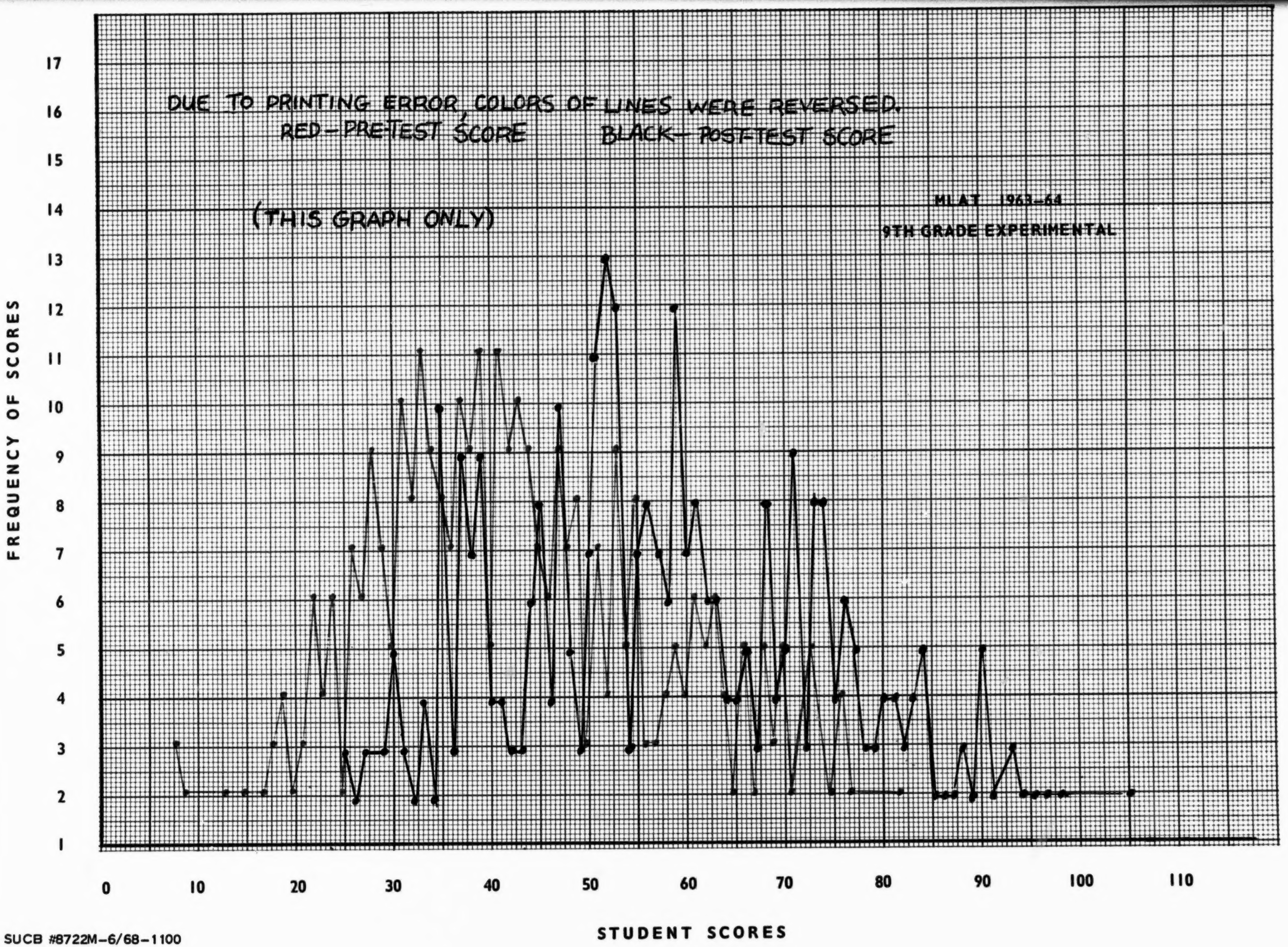
MLAT 1963-64
11th Grade Level
Experimental

A comparison of the relative degree of progress from the pre-test to the post-test by both groups, control and experimental, can be seen by examining these graphs. The larger number of students who actually regressed in the control groups, as compared with the experimental groups, is also easily observable. The relatively greater improvement by both experimental total groups can be seen by the relatively higher scatter of the post-test results. The exact relative percentage of improvement can be easily calculated by comparing the means as listed in Tables I and II. The total experimental ninth grade groups show approximately 200% more growth than the total control ninth grade groups did. The total experimental eleventh grade groups show approximately 250% more growth than the total control eleventh grade groups did. This improvement, though it varied somewhat, was consistent throughout all the groups as can be seen through an examination of Tables I and II. The following graphs are another way of showing the relative achievement of the two groups at each grade level. The black lines represent the frequency with which each pre-test score occurred. The red lines represent the frequency with which each post-test score occurred. A comparison of the closeness of these two charts for the experimental groups and for the control groups illustrates the relative progress of these two groups on the test. The significance of these results, the most important of the test results, will be discussed in Section 5.0.



SUCB #8722M-6/68-1100

SUCB #8724M-B-6/68-250

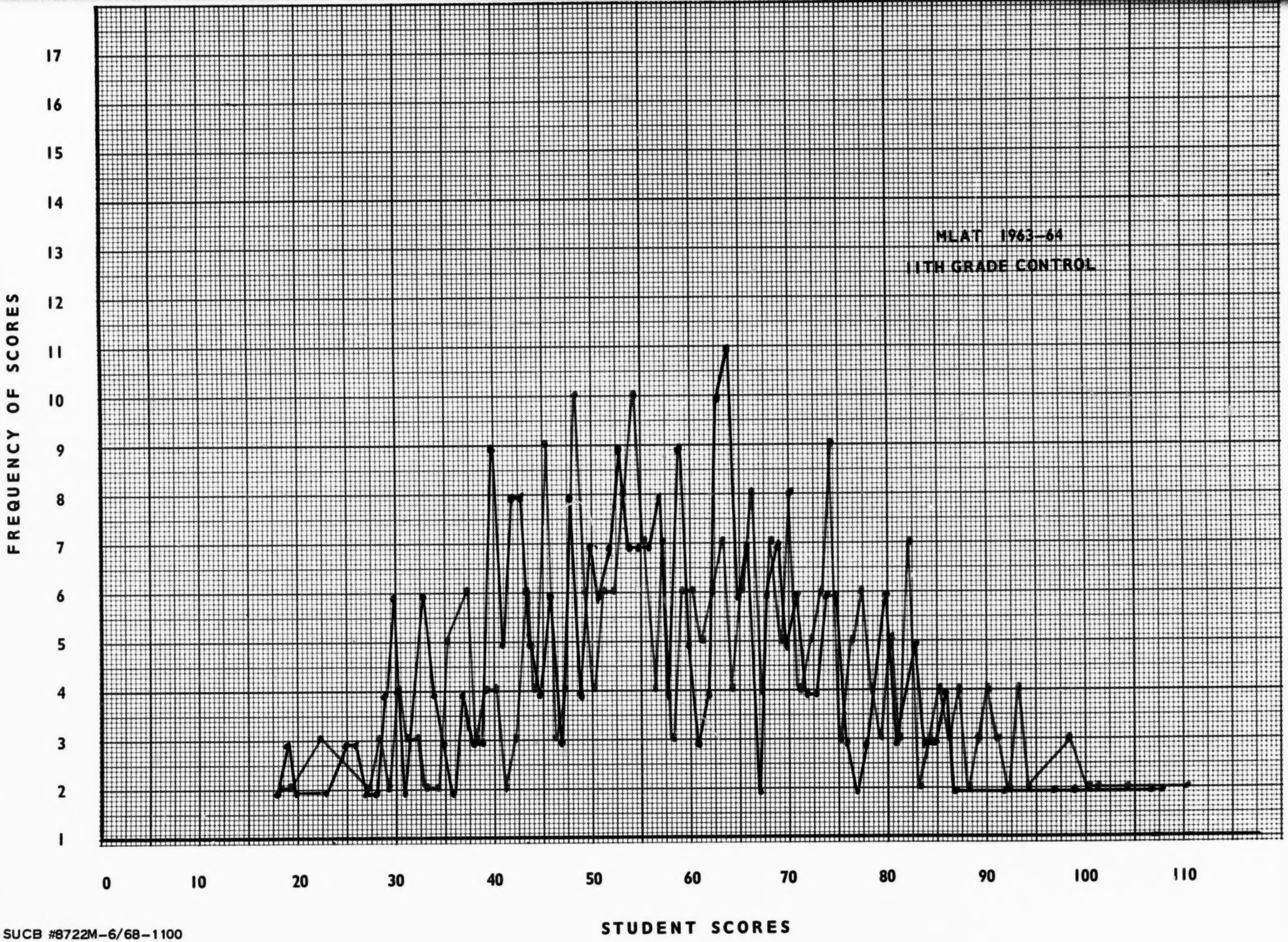


MLAT 1963-64

9TH GRADE EXPERIMENTAL

DUE TO PRINTING ERROR, COLORS OF LINES WERE REVERSED.
RED-PRE-TEST SCORE BLACK-POST-TEST SCORE

(THIS GRAPH ONLY)

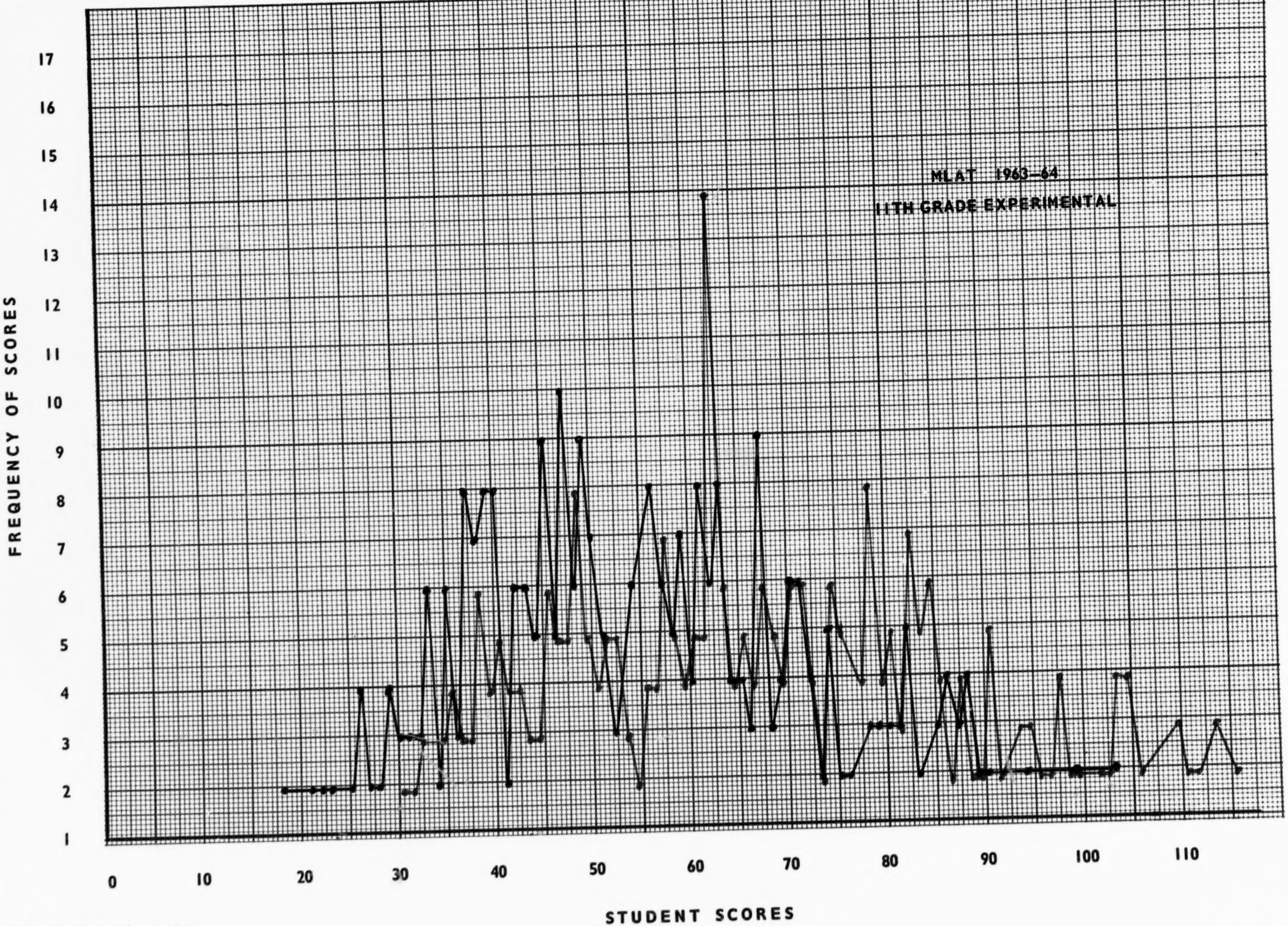


MLAT 1963–64

11TH GRADE CONTROL

SUCB #8722M–6/68–1100

UCB #8723M–A–6/68–250



SUCB #8722M-6/68-1100

SUCB #8726M-D-6/68-250

Tables III and IV are a tabulation of the results of the pre and post test scores of the total and individual groups on the STEP test. The relatively similar growth of both groups in regard to performance on this test can be seen through a comparison of the means and of the F ratios of the analysis of covariance.

Tables V and VI show an analysis of the results of one of the tests listed under the category of Specific Criterion, the normative placement of stress. An examination of the total results on the ninth grade level indicates a relatively high F ratio, caused by the fact that the experimental groups showed some growth on this test while the control groups showed some regression. An examination of the tables listing achievement by specific areas indicates that the ninth grade experimental urban group indicated growth while the control group remained the same. This was also true of the ninth grade suburban group. The ninth grade experimental non-urban group showed some growth while the control group regressed.

An examination of the results for the eleventh grade shows little difference in the performance of the control and experimental groups, either within specific socio-economic areas or considered as a total.

The two graphs following Tables III - VI attempt to illustrate the performance of the ninth grade total experimental and control groups on the placement of stress. The solid lines connecting the dots are a plotting of the frequency of the occurrence of a particular pre-test score. Superimposed on this, the dotted lines connecting the circles are a plotting of the frequency of the occurrence of a particular post-test score. A circle surrounding a dot indicates that that particular score was achieved with the same frequency on the pre-tests and on the post-tests. A comparison of this graph for the ninth grade control group with the ninth grade experimental group will show the relatively greater growth of the experimental group in this area of achievement.

TABLE III

STEP

9th GRADE

	Exp.		Con.		
	Pre	Post	Pre	Post	F Ratio
TOTAL	30.2	40.5	29.9	41.9	5.3
URBAN	26.0	42.7	28.6	40.9	7.3
SUBURBAN	34.5	39.6	30.5	42.5	6.9
NON-URBAN	27.8	39.2	31.4	42.8	3.6

TABLE IV

STEP

11th GRADE

	Exp.		Con.		
	Pre	Post	Pre	Post	F Ratio
TOTAL	33.4	42.3	32.0	41.9	.02
URBAN	33.9	43.3	32.4	42.6	.098
SUBURBAN	35.2	41.5	33.0	40.4	.088
NON-URBAN	30.6	41.6	30.4	42.6	.877

TABLE V

STRESS

9th GRADE

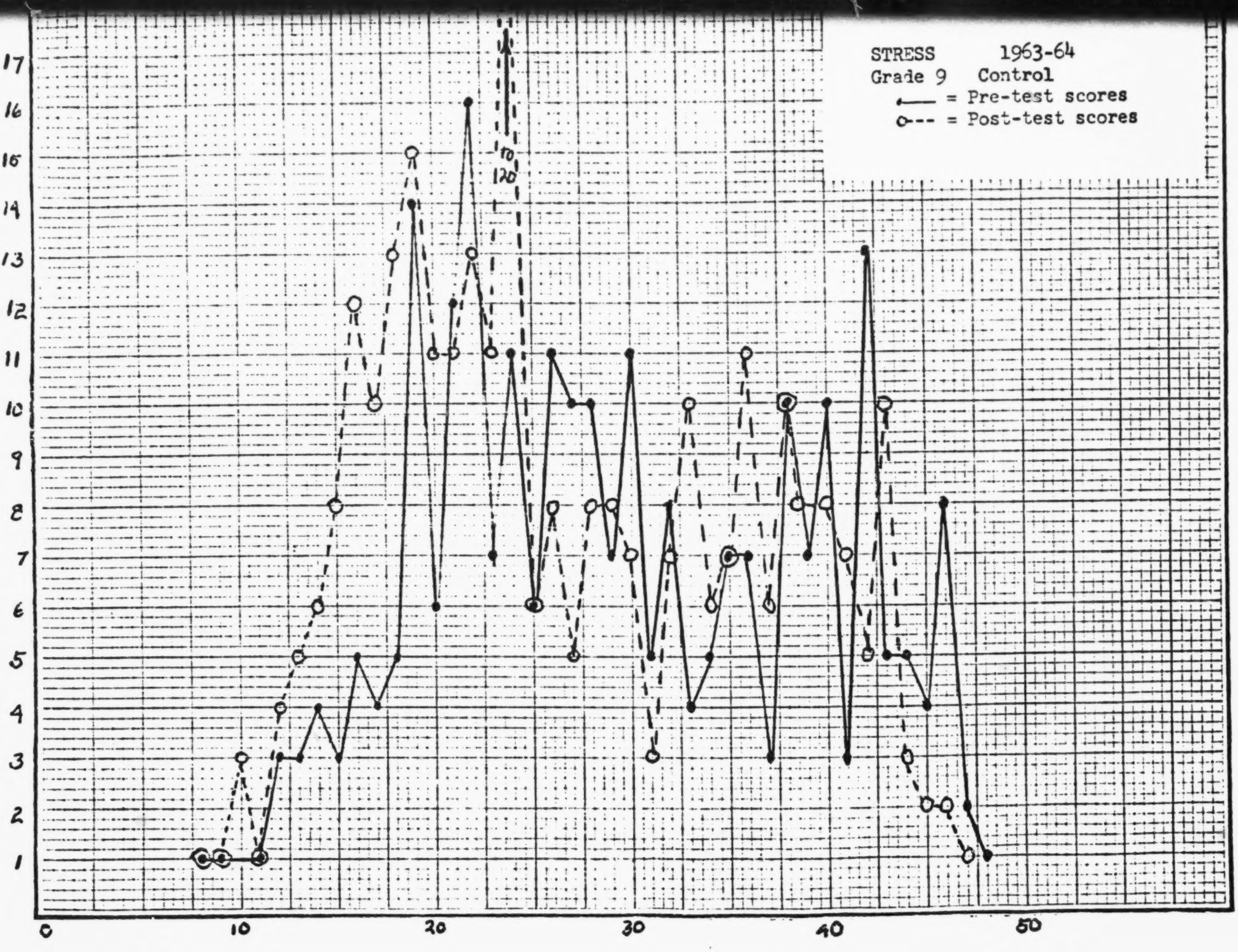
	Exp.		Con.		
	Pre	Post	Pre	Post	F Ratio
TOTAL	31.8	32.9	29.3	28.6	18.95
URBAN	30.8	32.8	28.6	28.6	7.4
SUBURBAN	34.5	35.6	30.2	30.2	7.3
NON-URBAN	27.8	28.2	29.6	27.9	3.7

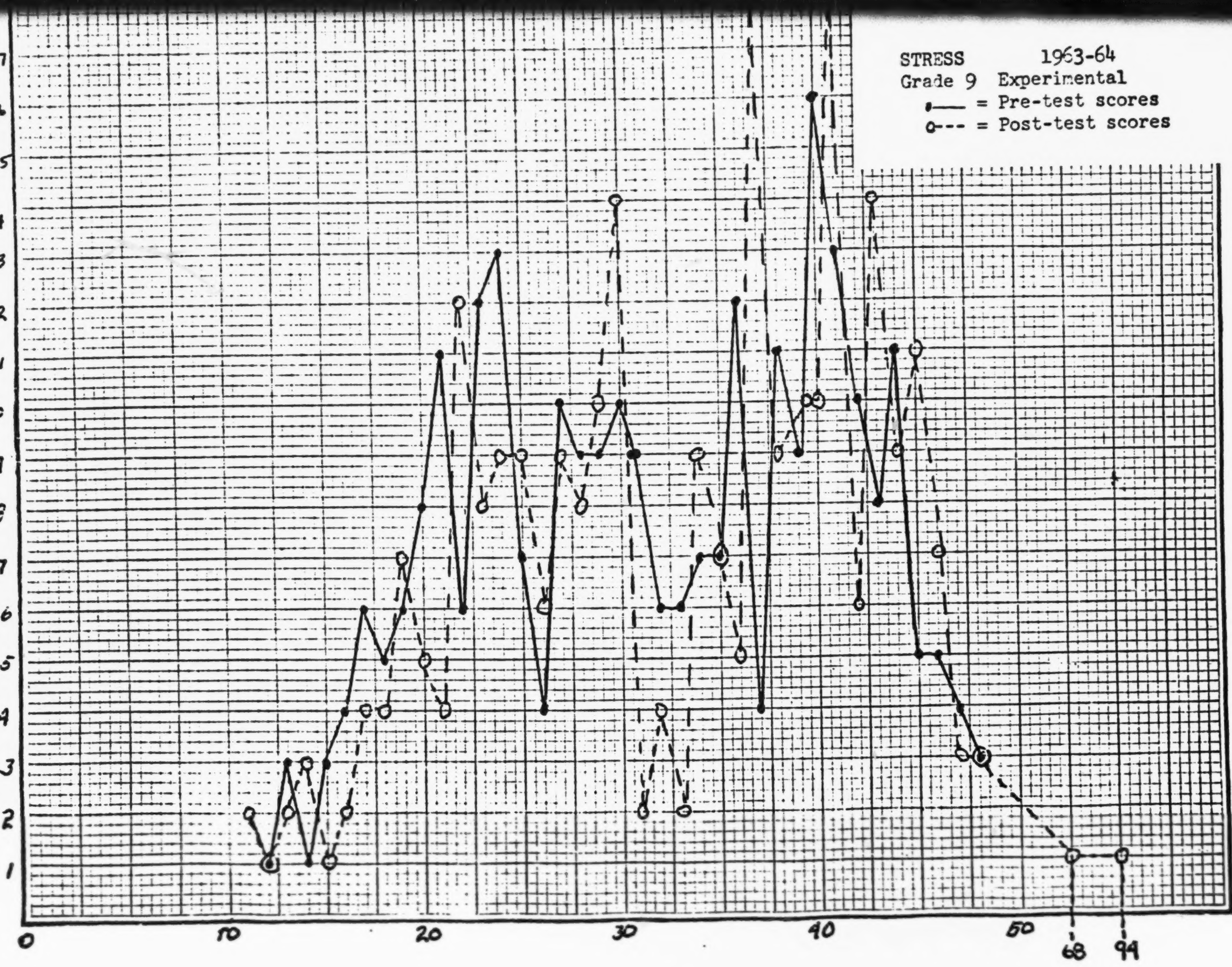
TABLE VI

STRESS

11th GRADE

	Exp.		Con.		
	Pre	Post	Pre	Post	F Ratio
TOTAL	33.2	33.3	31.8	31.7	1.0
URBAN	33.9	33.4	32.2	31.9	.017
SUBURBAN	35.0	34.0	32.7	31.8	.447
NON-URBAN	31.4	32.7	30.2	31.2	.377


STRESS 1963-64
Grade 9 Control
•—— = Pre-test scores
o--- = Post-test scores
to 120
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
10
20
30
40
50


STRESS 1963-64
Grade 9 Experimental
= Pre-test scores
= Post-test scores
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
0
10
20
30
40
50
68
94

Tables VII and VIII indicate the performance of experimental and control students in punctuation skills, as measured by one of the Specific Criterion instruments. No great differences in the relative achievement of the experimental groups and control groups are indicated. The total ninth grade experimental group achieved slightly more growth than did the total ninth grade control group but these results are reversed on the eleventh grade level.

Table IX indicates the results, in summary, of other tests administered. An examination of the various scores indicates that on the Grammar I and Grammar II tests (see Appendix Three) the experimental groups showed progress while the control groups showed some regression. On the Spelling test, both groups regressed. On the ITED, which closely parallels the STEP, both groups showed parallel growth. The Segmentation test results reveal that both groups regressed considerably. On the Grammar-Lorge comparison, the slightly higher mean I.Q. of the experimental group correlates with the slightly higher post-test result. The Lorge test grade is shown in Column II and the Grammar post-test results are shown in Column I.

Table X is a summary of other test results for grade 11. On the Grammar I test, the control group regressed somewhat more than the experimental group. On the Grammar II test, the experimental group showed some progress while the control group remained the same. In a comparison of the Grammar post test with the I.Q. (raw score) indicated by the Lorge-Thorndike test, the slightly higher Lorge mean of the experimental group (listed under Post) does not correlate with the Grammar post test (listed under the Pre column) as the mean of the post-test score of both the experimental and control groups is almost exactly the same. On the Segmentation test, the experimental group showed somewhat less regression than did the control group. The regression on the Spelling test was almost the same for both groups. The results of the ITED test indicate an approximately equal growth for both the experimental and the control groups during the course of the year.

TABLE VII

PUNCTUATION

9th GRADE

TOTAL

Exp.		Con.	
Pre	Post	Pre	Post
78.6	83.1	70.2	74.0
F Ratio			
5.7			

URBAN

Exp.		Con.	
Pre	Post	Pre	Post
81.7	88.9	70.5	77.6
F Ratio			
4.5			

NON-URBAN

Exp.		Con.	
Pre	Post	Pre	Post
72.5	74.3	64.9	70.2
F Ratio			
.97			

TABLE VIII

PUNCTUATION

11th GRADE

TOTAL

Exp.		Con.	
Pre	Post	Pre	Post
84.5	87.3	87.0	91.0
F Ratio			
2.1			

URBAN

Exp.		Con.	
Pre	Post	Pre	Post
82.9	83.6	87.2	88.3
F Ratio			
1.2			

NON-URBAN

Exp.		Con.	
Pre	Post	Pre	Post
85.7	90.5	88.2	92.6
F Ratio			
.03			

TABLE IX -- TOTALS OF OTHER TESTS -- GRADE 9

Grammar I

Exp.		Con.	
Pre	Post	Pre	Post
10.4	11.1	19.9	6.2
F Ratio			
39.3			

Grammar II

Exp.		Con.	
Pre	Post	Pre	Post
10.4	14.5	19.9	13.0
F Ratio			
15.4			

Grammar - Lorge

Exp.		Con.	
Pre	Post	Pre	Post
69.2	62.2	66.5	57.0
F Ratio			
7.5			

Segmentation

Exp.		Con.	
Pre	Post	Pre	Post
67.3	19.8	62.3	17.2
F Ratio			
5.6			

Spelling

Exp.		Con.	
Pre	Post	Pre	Post
75.1	72.9	69.9	64.5
F Ratio			
6.01			

ITED

Exp.		Con.	
Pre	Post	Pre	Post
38.6	40.1	37.9	39.9
F Ratio			
.492			

TABLE X -- TOTALS OF OTHER TESTS -- GRADE 11

Grammar I

Exp.		Con.	
Pre	Post	Pre	Post
10.5	8.0	17.3	9.8
F Ratio			
3.8			

Grammar II

Exp.		Con.	
Pre	Post	Pre	Post
10.5	13.1	17.3	17.3
F Ratio			
22.2			

Grammar - Lorge

Exp.		Con.	
Pre	Post	Pre	Post
54.1	64.9	54.2	60.0
F Ratio			
11.9			

Segmentation

Exp.		Con.	
Pre	Post	Pre	Post
51.5	23.3	51.1	15.7
F Ratio			
63.7			

Spelling

Exp.		Con.	
Pre	Post	Pre	Post
79.4	76.5	80.6	77.0
F Ratio			
1.3			

ITED

Exp.		Con.	
Pre	Post	Pre	Post
43.7	45.2	42.7	43.6
F Ratio			
3.8			

4.3. Special Problems. As mentioned earlier, one of the problems was the extensive battery of tests undertaken by the Project. Students are extensively tested in most schools on various standardized instruments. When the large battery of tests for the Project were added, some negative motivation effects were clearly discernible. Students simply tired of being tested. In one of the suburban situations (11th grade experimental), a considerable portion of students were also included in another experiment (large group instruction in chemistry) and were also extensively tested for that project. The negative reaction to testing was especially noticeable among these students, understandably, we feel. For this reason, there was an attempt made to shorten and simplify the testing for the program during the second year of classroom evaluation.

There were other problems, clearly beyond the control of Project personnel, which developed. One example concerned one of the suburban schools which dropped out during the first year of operation of the project. The teacher who had been trained to handle experimental sections during the 1962-63 academic year became, rather unexpectedly, pregnant and a substitute had to be found at the last moment. The substitute did not prove to be satisfactory and so the school was dropped from the project, with no real adverse effects on the test results of the project. In other instances, some schools ran into a specific, immediate problem at the time a particular test was scheduled to be administered. In a few instances, it was not possible to re-schedule the administration of this test, resulting in some missing data. Though these were always regrettable, the proportions were minor during the 1963-64 testing year and the data was relatively complete. During the 1964-65 testing year, the problem was a more serious one, resulting in more serious gaps in the data. One such instance concerned the Rush-Henrietta school system. Project personnel arrived at the school, some seventy-five miles distant from Buffalo, at the date and time previously arranged. When they arrived, it was impossible to administer the battery of post tests and no school administrator could, or would, explain their change of plans. It was not possible, because of the end of the academic year, to re-schedule these tests. This event caused serious gaps in the 1963-64 data as groups which had been paired with groups in this school also had to be left out of the final analysis of test results.

The testing program for the 13th grade level also encountered some special problems. In many of the colleges which had agreed to cooperate in the program, Freshman English is restricted to one semester. After attempting to work in these situations, it was decided that the duration of the experiment was so short that formal test results would not be very meaningful. In other situations, where Freshman English extends over two semesters, there was great difficulty in keeping students together for two semesters. Generally, it was possible to keep the experimental groups together as there was motivation for the students to return to the same section of their Freshman English class, but in no situation was it possible to keep a sufficient number of the control students together to allow for the administration of a sufficient number of post tests to make test evaluation significant. The evaluation of the program on the 13th grade level had to be restricted, therefore, to an informal evaluation on the part of instructors and students.

Another significant problem was the crowding of the English curriculum in many schools. In a few instances, area schools have such an extensive literature program that there is little time to include instruction in any other area or dimension of the English program. Though the investigators of this Project feel that a good literature program is highly desirable, teaching literature solely does not seem, to us, to be an adequate response to the needs of students for skill and understanding concerning language.

Even where this particular attitude, on the part of teachers, was not a problem, it was difficult to include all of the materials on language that the investigators would have desired within the scope of one year. We feel that it would have been more reasonable, and useful, to add various aspects of a linguistic treatment over the course of several years. These, then, could be correlated with more specialized instruction in various aspects of applied linguistics.

The extensive testing program also added to the time pressures felt by teachers and students.

4.4. Test results - 1964-65. As mentioned above, there was a serious problem in regard to missing data for this year of operation. One of the principal purposes of continuing the project for another year (as stated in Appendix One) was to refine the instructional material. This part of the program was completed with no problems. Another purpose of extending the program was to include teachers in the experimental program who had not received special in-service training in linguistics prior to attempting to use linguistic materials in their classrooms. This part of the program was also achieved with no difficulty and the results were interesting. It was found that teachers could use the Project materials successfully without a prior in-service course in linguistics, though the reactions indicated that in-service work was, nevertheless, desirable where possible. The lack of such in-service training did not prevent teachers from understanding the materials nor from using them effectively in the classroom. Another goal for the 1964-65 academic testing year was to extend the experimental treatment to other grade levels. This was also achieved.

Table I indicates the result of pre and post test results of the MLAT. A comparison of the results on the ninth grade level again indicates that the experimental group developed considerably more sensitivity to language as the result of the experimental treatment; almost 200% more growth was shown. The results on the tenth and twelfth grade levels show no significant difference in the achievement of the two groups.

Table II shows the results of the ITED. The STEP was dropped in 1964-65 to shorten the battery of tests. It was felt that the ITED and STEP were very similar and in 1963-64 the results on both tests had been very similar. On the ninth grade level, the experimental group showed considerably more growth than did the control group. On the tenth grade level, the control groups showed some greater growth than did the experimental groups. On the twelfth grade level, the results were about the same for both groups.

Table III shows the results for the Syntax test (see Appendix Three), On the ninth grade level, both groups regressed, though the regression on the part of the experimental group was somewhat less. On the eleventh grade level, both groups showed considerable progress but the progress was greater for the control group. On the twelfth grade level, the progress was greater for the experimental groups.

Table IV summarizes the results of the groups on the Spelling test (see Appendix Three). On the ninth grade level, both groups showed considerable improvement on their post-test results but the results for the experimental group show considerably greater growth. On the twelfth grade level, both groups again showed considerable improvement and in this instance, the improvement was nearly the same.

Table V, which shows the correlation between the Syntax post-test score and the raw score on the Lorge-Thorndike I.Q. test, indicates a positive correlation between I.Q. and the achievement on this test. The higher Lorge-Thorndike score for the control groups on the tenth and eleventh levels correlates with a higher post-test score. The higher Lorge-Thorndike score for the experimental group on the twelfth year level correlates with a high post-test score.

TABLE V -- SYNTAX - LORGE

Grade 10

Exp.		Con.	
45.7	51.4	60.3	70.9
F Ratio			
8.9			

Grade 11

Exp.		Con.	
47.2	50.7	55.3	57.9
F Ratio			
2.1			

Grade 12

Exp.		Con.	
58.4	57.9	51.2	52.4
F Ratio			
.005			

4.5. Informal reactions. One of the positive results of the Project was finding that a linguistic treatment of the language tends to produce a positive response on the part of teachers and students, as evidenced by the informal reactions.

As would be expected, teachers are not an uncritical group. They tend to evaluate their situation critically and to articulate their criticisms. Detailed, specific criticisms of the materials were very useful to Project personnel in undertaking revisions. One factor, beyond the control of the investigators, accounted for a fair number of criticisms. As mentioned in the discussion of special problems, the time factor was of continued concern. A major part of the problem was an already crowded curriculum; the other part was the attempt to undertake so much in one year in order to be able to measure the results. Generally favorable student responses tended to have a positive effect on the teachers' attitudes. Listed below are some specific student comments, typical of those elicited orally in interviews by teachers and Project personnel and in writing:

> "I really learned something new this year."
>
> "My English class was more like chemistry or math."

This response, in several versions, occurred frequently and, in a majority of cases, the valence was positive. In a few instances, it was intended as a negative criticism:

> "I really enjoyed studying how animals communicate."
>
> "I especially enjoyed the parts about the history of English."
>
> "I was fascinated by seeing how a poem really works."

Though a unit on prosody was projected, it was not included in the Project materials, primarily because most teachers felt they would not have the time to include such a unit. Nevertheless, a discussion of a linguistic approach to metrics, relying heavily on an analysis of supra-segmental phonemes, was included in the in-service training and some teachers did prepare and teach such a unit. Where attempted, it met with almost universal positive response. It must be stated that those teachers who attempted the unit restricted its use to upper level students (eleventh and twelfth grades), generally those who were college bound.

> "It's not the same old stuff, again, year after year."

This response occurred very frequently. As linguistics is used more generally, care needs to be taken to avoid the feeling of continual repetition, which has plagued English instruction generally.

> "It's been a real challenge."
>
> "Will it help me in college?"

The first unit to win almost universal praise from teachers was the one on the history of the language, probably because it came closest to a traditional concern of English teachers with language history.

Though many teachers expressed considerable concern over their ability to teach a phonological analysis of the language, almost all were satisfied with the unit and were surprised at the lack of difficulty in teaching it. After the initial response, there was no great difficulty with the approach to this unit.

Morphophonics, despite its theoretical importance, was the subject for considerable discussion between teachers and Project personnel.

One of the instructors of a college class, who was very enthusiastic about the materials, said, "This is absolutely great. I understood the phoneme, myself, for the first time." This instructor had taken courses in linguistics. In addition to the materials in the text, he reproduced the unit on phonology which had been prepared for the training of teachers and used it with his students, with great enthusiasm on his part and on the part of his students.

The following response (next page), quoted in its entirety, is typical of teacher responses:

"I have used the Buffalo Linguistics Project materials in four Freshman English classes over a period of four semesters and found, predictably, that certain sections were more useful than others. Students reacted to the introductory materials, i.e., "The Setting of English," in a generally positive manner, indicating a clear and concise presentation. "The Speech Package" presented no difficulty that practice through carefully controlled and regular coaching by the instructor did not eliminate for the most part.

The same cannot be said of "The Shapes of English." There is a subtle elusiveness about the concept of the morphophone which places it beyond the grasp of most Freshmen. I suspect that a re-write of the chapter on morphophonics, which would include Dr. Henry Lee Smith's most recent revisions of the concept of the morphphone, would be most useful.

The remaining sections of the "Speech Package" posed no real problem to the students. Close attention to definitions, careful and consistent practice provided, as usual, the key to success.

I cannot report on the effectiveness of Volume II since we spent both semesters on Volume I. There is simply too much material, too many concepts, too much that is new, strange, and perhaps even formidable about these two volumes to allow comprehensive treatment in less than four semesters, and that at the most elementary level.

"The Glossary of Terms" is a carefully conceived and nicely constructed tool which contributes to the students' ability to manipulate the materials presented."

5.0. Interpretation of Results

5.1. The results of the Buffalo English Linguistics Project have both some startling and expected results. Among the expected results was the fact that adding a linguistic component for a year to the normal curriculum of a high school class, at any level involved in the project, or at the freshman year of college, will not provide a panacea. It will not suddenly enable students who have short-comings in speaking or writing to become articulate, without other efforts. The standardized tests used in the project, which were designed to test knowledge of traditional discrimination in language use, indicate that there was no significant difference in these regards in the performance of the control and the experimental classes, though some of the experimental groups and none of the control groups did achieve some significant improvement in special areas of performance, such as punctuation or spelling.[1] As indicated, it would have been interesting to test student response in terms of potential for creativity. This is difficult to evaluate, of course, and was not possible within the scope of the project.

The most interesting results, we feel, were in regard to the performance of students on the John Carroll Modern Language Aptitude Test. Here all experimental groups, and none of the control groups, scored remarkably better[2] after the introduction of a linguistic component. The significance of these performances needs to be carefully evaluated and constitute, in the opinion of the investigators, the most significant contribution of the

---

[1] See Summary of results.

[2] See Summary of results. All experimental groups showed markedly more growth in sensitivity to syntactic structure during the course of the experimental year than did the corresponding control groups.

Buffalo English Linguistics Project, as far as test results as concerned.

The Modern Language Aptitude Test, as most readers will know, was designed to predict student success in learning a foreign language. It has two basic parts. Part I tests a student's ability to discriminate speech sounds that are not a part of his native language. This, of course, constitutes a valuable talent for a student who attempts to learn another language. This part of the test was eliminated from the Project battery because of the fact that students in the experimental situation did receive instruction in English phonology and students in the control group did not. It would seem obvious that students in the experimental groups would be expected to perform more competently after instruction focused attention on the phonological components of language. It would have been difficult to argue that something significant had occurred when the experimental students performed significantly better on Part I of the test as the result of such instruction. Of course this would have contributed to the preparation of students for foreign languge instruction. But this was not a major purpose of this study. Therefore, only Part II of the MLAT was used as this portion represented an evaluation of sensitivity to syntactic structuring in language, even though it carefully avoids the use of grammatical terms, either traditional or linguistic. Part II, again, has proven itself as an extremely useful predicting instrument for identifying those students who will perform well in the learning of a foreign language. Students in the control groups did receive comparable instruction (in terms of traditional approaches) in the syntactic structuring of the English language. Yet the experimental groups, without exception, performed dramatically[3] better than the control groups. What does this **imply** for a sensible evaluation of the utility of introducing a linguistic component into the English program? First of all, it clearly, if not overwhelmingly, indicates that, if you want students to know how their language functions, you may accomplish this objective by teaching students something of a linguistic description of the English language, especially the linguistic model used by the Buffalo English Linguistic Project. Whether similar claims can be made for other linguistic models remains for other investigators to discover. The investigators of the present study certainly do not feel that all linguistic models could be expected to produce the same result. The best way to summarize the result that was achieved in this study is that it was clearly demonstrated that students were sensitized to the syntactic structuring of their language in a way which could not be achieved by traditional instruction in the English language. That the performances were so outstandingly different in the control and the experimental groups indicates that this difference in sensitivity was radical and not minor.

Two questions of prime importance for all English instruction are suggested by these results. 1) Is this increase in sensitivity significant in itself? 2) Is it possible for instruction in English to capitalize on the achievement of such linguistic sensitivity to produce more competent performance in writing and speaking?

The investigators feel that the answer to the first question is definitely affirmative. Until the language arts movement of the thirties, it was considered of prime importance for every educated person to have a knowledge of how his language functions. With the emphasis which developed early in the language arts movement, and which has since at least been modified, on a narrow kind of pragmatism in English language arts instruction many educators felt that only that instruction in language arts which produced an immediate discernible improvement in the student's writing competence was justified in the then new language arts curriculum. Such immediate results are hardly achieved in any other area of the curriculum and this attitude had the further result of completely undermining the role of a knowledge of language for its liberal arts value (the same as history, art, music, biology, or chemistry might hold) in the school curriculum. It was argued that students need not know (or perhaps even should not know) anything about their language unless it was immediately useful to them in improving their writing skills. It was the attitude of the investigators of this Project that such a philosophy was not in keeping with more enlightened views toward language study and that pragmatic results were not so easy to come by. We felt that students should know something about the nature of language because it was the first and most important human discovery. It was and is the most important distinguishing characteristic between humans and the rest of the animal species. If knowledge of any part of the human experience is interesting for its own sake, then knowledge of the nature of human lnaguage is supremely interesting. The infinite applications of knowledge of linguistic analyses to other disciplines (namely sociology, psychology, anthropology, philosophy, even mathematics and computational science) clearly demonstrates the ultimate utility of a knowledge of linguistic science.

---

[3] See footnote 2 and the Summary of results.

The second question remains more problematic. It would seem that a sensitizing of an individual to linguistic structures would ultimately make him more competent in various aspects of his linguistic performance but clearly the results of the present study could not be used to prove the merits of such a hypothesis. If, however, it has been well-demonstrated[4] that students who perform well on the MLAT will have a much greater probability of achieving success in the learning of a foreign language, and if it is true that introducing a linguistic component in the English classroom, even for the short duration of a year, will dramatically improve a student's performance on this examination, then it logically follows that such a student, exposed to this experience, has radically increased his potential for learning a foreign language. Does this, then, on the contrary, indicate that his performance in his native language will not be aided by this experience? As stated, the opposite of this hypothesis has not been proven by the present study but that such a hypothesis could be supported on the basis of the results seems highly unlikely. It remains for future studies to demonstrate that a logical corollary of an increased competence for foreign languages is that sensitivity to syntactic structures will also aid in achieving a higher level of competence in the skills of the native language, including ability in both writing and speaking with force and clarity. How these goals may be best achieved would also provide the basis for a future study of considerable merit, or so it would appear to the present investigators. The techniques for capitalizing on this sensitivity are not yet fully known. Current materials, mostly developed since the inauguration of this study, which use a linguistic component[5] proceed on the assumption that they do know the best way to achieve such results. But they clearly were not based on careful objective evaluation of their approaches. The various authors proceeded on the assumption that their own experiences, various as they were, were adequate for determining the best procedures for capitalizing on the introduction of linguistic components. We feel that careful evaluations of their assumptions and procedures are much in order. A pilot study, as suggested in Appendix 5, would be able to produce some definitive evaluations and some suggestions of which techniques will be more fruitful and ultimately useful in promoting the acquisition of higher competence in linguistic performance.

---

[4] Again, see the Summary of results.

One concrete example in an area of linguistic analysis that is not particularly new would, perhaps, be useful. It is easily observable that some people, notably some but not all actors, have a special talent or sensitivity for mimicking dialects and even ideolects. These people seem to need no instruction in phonetics or phonology for the achievement of their performance. The average person is not able to master such performances. But after instruction in phonetics, almost anyone can be taught to accurately discriminate among dialects and most can be taught to mimic dialects quite successfully and accurately, though not necessarily "artistically." This may be a valid analogy for other areas of linguistic study. Some people are highly competent, even gifted, writers of the language though they know little of formal linguistic analysis. (Many of them, however, have made quite sophisticated linguistic analyses of their own, though their terminology may, reasonably, differ from that of the linguist.) But as the average person can be taught to be more sensitive to dialects, can he not also be reasonably expected to be able to be taught to be more sensitive, and hence more competent, in his linguistic competence on other levels of linguistic performance? If competence in one area of linguistic performance can be taught, that is understanding and reproducing various dialects, then cannot linguistic competence in other areas, such as writing, be taught. We feel that the present study has produced important evidence that linguistic sensitivity can be greatly increased by instruction using a competent description of the language involved.[6] We feel that such sensitivity can be, quite reasonably, the basis for improving ability in linguistic performance, including both speaking and writing, but that the methods by which such improvement can be best achieved, still need to be determined. Also approaches using a model that has not been carefully evaluated in terms of its ability to increase student sensitivity to language, such as transformational-generative grammar, which has more in common with traditional school-book grammar than with the empirical science of linguistics, need to be subjected to a study such as the present one before it can be reasonably asserted that they can be useful in promoting sensitivity to linguistic structures.

---

[5] Such series as the Harcourt, Brace Roberts English Series or the American Book Company's Herman and Conlin series.

---

[6] The aspectual linguistic analysis is one such competent model. Other promising linguistic models would include the tagmemic and stratificational descriptions. Some well-done eclectic approaches, such as that found in Allen, Newsome, et al, New Dimensions in English, also hold promise.

The examination of the testing program also indicates that changes in performance, as the result of the experimental treatment, were more dramatic on the ninth grade level than on the eleventh grade level. This would seem to indicate that an earlier introduction of linguistic concepts and analyses would be more beneficial than a later introduction. The upper grade levels can be used for adding more sophistication to the approach and for having students do independent investigations of dialect and usage distinctions in their own geographic area and among various social groups.

5.2 Dissemination of Information and Materials

One of the purposes of the Buffalo English Linguistics Project was to encourage interest in the application of linguistics to the teaching of English and to provide some leadership during the transition from traditional to linguistic programs. Locally, this was done in several ways, as will be enumerated below. Nationally this has been attempted through the action of the investigators of this project and through the activities of various staff members. Encouraging the intelligent use of linguistics will be further promoted through the publication of this final report and through the submission of parts of this report to professional journals to disseminate the results of this study.

In addition to these kinds of activities, various in-service activities for teachers, many of them sponsored by branches of the federal government, have had the benefit of the materials and approaches devised during the course of this project.

In addition to the several school systems that used the Project materials during the course of the experimental study (some of whom are continuing to do so), the materials were also used in the following ways:

1) At the 1965 meeting of the New York State English Council a demonstration lesson was held using teachers and students from Williamsville Central School (one of the cooperating school systems for the project). Over 200 teachers witnessed this exhibition which used Chapter 10 of the Project materials (see Appendix II).

2) The Project materials were the main text for a 1966 NDEA Institute in English held at the State University College at Geneseo under the directorship of Dr. Hans Gottschalk. As a result of this activity, the

materials of the project became known to many teachers in New York State and to teachers as far away as California, Oregon and Mississippi. These same materials will again be the primary text in the summer of 1968 for another NDEA Institute in English, also to be held at the State University College at Geneseo under the directorship of Dr. Gottschalk. Again, the teachers from New York State and eighteen other states will become thoroughly familiar with the approaches and materials of the Buffalo English Linguistics Project.

3) The Project materials were used for two intensive NDEA workshops at Smethport, Pennsylvania. The first was a basic workshop in English linguistics held by the Project investigators and staff during June of 1966. This was followed by a workshop in Applied Linguistics held during the winter and spring of 1966 and 1967. Project materials were the core of the presentation.

4) During the fall and winter of 1965 and 1966 Project materials were used in an in-service institute sponsored by the Genesee Valley School Development Council of the University of Rochester. This institute was held primarily for the benefit of English department chairmen in the Rochester area. It was conducted by the Project investigators and staff. Over seventy-five teachers and administrators attended this institute, which included a total of fifteen weekly sessions.

5) Principal Investogator Sustakoski used the Project materials in two in-service workshops that he conducted at Penfield Central School (1966) and Lackawanna Central School (1967), with a total enrollment of over eighty teachers.

6) The Project materials were used for a four-day Institute in

Applied Linguistics sponsored by the Department of English of the State University College at Buffalo and the Department of Linguistics of the State University of New York at Buffalo during the spring of 1968. Over one hundred teachers and administrators attended this institute.

7) The work of the Project influenced the report of the Reading Committee of the University of Nebraska / U.S.O.E. Conference on Elementary Language Arts held in March of 1966.

8) Dr. Zack Bowen, of the State University of New York at Binghamton, used the Project materials as the basis for a federally-sponsored, in-service workshop for teachers in the Binghamton area.

9) The original work done on intonation and punctuation (see Unit Ten of Appendix II) is being prepared for publication as a monograph by the New York State English Council and will thereby receive wide distribution within the state and probably nationally.

10) Other parts of the Project material are presently being prepared for publication under various auspices. Within the next year, almost all of the materials developed for the Project will receive wide distribution.

11) Project materials have been used in the Freshman English program, on an experimental basis, at the State University of New York at Buffalo, at St. John Fisher College in Rochester, and at the State University Colleges at Buffalo, Geneseo, and Fredonia.

12) The Project materials formed the core for a course in Applied Linguistics (which was a part of an in-service institute sponsored by the Department of Education of the State of New York) at the State University College at Buffalo during the spring semester, 1967.

APPENDIX 1

I. Problem. To test the relative merits of the linguistically-oriented and the traditional approach; to evaluate, in terms of their local application (for grade levels seven through thirteen) existing materials for English instruction which are based on descriptive linguistics; to test selected materials; to determine what new materials are needed; and to ~~devise and~~ test such new materials. The significance of this research would be to determine the extent that the application of descriptive linguistics can be of benefit in achieving, and if possible, surpassing the traditional goals of instruction in English.

II. Objectives. The general hypothesis of this study is that students taught by the linguistic approach will perform better than those taught by the traditional approach as measured by student achievement of the following objectives:

1) To use normative placement of accent. (Instruction will be based on a scientific analysis of stress, pitch, and juncture.)

2) To spell words correctly. (More effective rules of spelling, based on a new analysis of the relationship between spoken and written language, will be used for instruction.)

3) To use acceptable punctuation. (Rules will be based on an analysis of the relationship between spoken intonation and written punctuation.)

4) To use a grammatical guide that will make teacher corrections of student writing sensible and understandable. (This guide will be based on a descriptive analysis of English grammatical functioning.)

5) To speak the standard dialect of the geographic area. (The phonemic analysis of English will be an instrument for work toward the achievement of acceptable dialects.)

III. Other Related Research. There are no other research projects concerned with the application of linguistic science to the teaching of English at the grade levels seven through thirteen, to the best knowledge of the investigators. Considerable effort has been devoted to the application of linguistics to the teaching of foreign languages and to the teaching of English as a foreign language, but the resources of the approach to the teaching of English have not been thoroughly examined.

There have also been applications of linguistics to the teaching of reading, and one of the principal investigators has served as consultant to some of this research and to the preparation of reading primers and pre-primers.

The problems of teaching foreign languages, of teaching English as a foreign language (such as the major project at UCLA for teaching English to Filipinos), and the problems of teaching reading are not the same as the problems of teaching English to native speakers at the grade levels listed above. The principal investigators are familiar, in some cases in considerable detail, with the application of linguistics in these areas and any pertinency will be thoroughly examined; but quite primarily, the applicability of this kind of research to this project is limited.

The researchers are also aware of Cooperative Research Project No. 307, on the application of a linguistic approach to the education of aurally-handicapped children, but again the pertinency is limited, though the investigators will be interested in studying the results of the experiment.

There have also been individual school systems who have explored possibilities of applying linguistics to the teaching of English through the use of some of the materials listed that will be evaluated in this project. Some of these systems have also made attempts to devise other materials. The principal researchers are familiar with many of these attempts, such as the one carried on by the Westport, Connecticut High School. There has been an exchange of ideas with these explorers as well as an exchange of materials, attempts at evaluation and an exchange of approaches. The project staff will be very willing to correspond with any school systems that are carrying on any explorations of this nature and will make their own findings available readily.

The significance of this research project is that it marks the first attempt to systematically study the opportunities of using available materials, determining the necessity for other materials, and devising materials, and to thoroughly, statistically evaluate the results of applying linguistics to provide the data about the efficacy of this approach as compared with the traditional approach. No previous attempts at this kind of detailed scientific evaluation have been made. The people who have attempted to apply linguistics have done so on the faith that it will result in improved instruction. This study attempts to delimit the improvement that could be expected by a careful application of the descriptive linguistic approach. It will also be concerned with findings in regard to the methodology of applying linguistics. The distinct advantage that a project of this nature would have over the more informal approach to this problem is that it would systematically evaluate the problems and the possibilities for resolving them.

IV. Procedure. The public secondary school portion of this experiment will be replicated in three geographic areas, an urban area, a suburban area (Williamsville, New York) and the rural area surrounding Potsdam, New York. The locations were chosen to provide distinct socio-economic areas. In each area, at least four classrooms of students will be selected at each grade level, 7, 9, and 11. Two classes from each grade-area combination will be given the experimental treatment and two the control treatment. The students in each class will be heterogeneous, within the limits of the school population, or if any type of homogeneous grouping is present, each experimental group will be paired with a control group belonging to the same level of homogeneous arrangement. The experimental treatment will be conducted by regular classroom teachers who have had an introduction to linguistics and who will be further trained by the project staff in special seminars for preparation and evaluation. The project staff will also make very frequent visits for observation and consultation. Special instructional sessions for teachers will precede each unit of linguistic material to be introduced to the classroom.

The linguistic approach will be based on the assumptions that spoken language is primary, that writing is based on an attempt to reproduce the language as it is spoken, and that writing has developed its own traditions, sometimes at variance with the spoken language. At this point, the spoken and written aspects of language have to be compared and contrasted. The instruction will be based on a description of the language that is analytic and accurate to the extent that linguistic science permits. The standards of the various levels of language usage will be based on a description of these levels, correlated with their social status implications. A description of literate traditions of usage will be presented as a level that is of significance to every strudent.

The first year will be largely concerned with training and familiarizing the cooperating teachers with the use of materials. Available materials will be evaluated, then tested in classroom use. New materials will be devised, when possible, during the school year and also during the summer of 1963 by the project staff. It is expected that by the fall of 1963 materials will be reasonably refined and the cooperating teachers will have achieved some degree of sophistication in the use of linguistic materials. Part of the training program for teachers will include an in-service course in linguistics to be given at the Williamsville Central School.

In the second year of the program, the actual controlled evaluation of the efficacy of the linguistic approach will be made. The comparative measurement of achievement in terms of general language usage and retention of specific content among the experimental and control groups will be made during this part of the program, as described in detail in following sections.

The following specific areas and objectives will be covered in the experimental treatment:

Primarily Spoken English

1) To present a scientific description of stress, pitch, and juncture in English as a basis for developing a guide to accepted standards of pronunciation in regard to preferred placement of stress. The materials currently available, in the traditional approach, appear to confuse stress and pitch as phenomena of language. This may be the reason the New York State Regents dropped the question concerning stress on the 11th and 12th year regents examinations in English. This analysis would allow this traditional concern of English teachers to be restated and reinstated in the curriculum on a sound basis.

2) To provide teachers and students with a phonemic analysis of dialect differences as a basis for work toward conscious control in the development of area standard dialects of English among students speaking non-standard dialects.

   a) The phonetics of traditional dictionaries is not adequate to meet this problem. This inadequacy can be demonstrated and scientific phonetics can provide a basis for work with students on this problem.

Primarily Written English

3) To provide comparisons and contrasts between English pronunciation and morphemic construction of spoken words and the traditions of spelling as a basis for promoting greater student awareness of the relationship between pronunciation and spelling. The application of the descriptive analytic method to spelling will result in the development of new, concise, and understandable rules, thus developing more accurate spelling habits among students.

4) To provide comparisons and contrasts between English intonation (the "punctuation" of spoken English) and the traditions of written punctuation. Such a study would inculcate better habits of punctuation.

5) To study the grammatical structure of English as a basis for encouraging in the student greater consciousness of acceptable language control and for making sensible and understandable corrections in student writing. Such a study would present a progressive analysis of English, starting with the sound components of the language and evolving towards its total grammatical functions.

General Language Understanding

6) To increase the student's awareness of the nature of language in the cultural communication situation.

7) To provide an analysis of levels of spoken and written English and to give students an insight into the significance of the use of these levels in terms of cultural patterns.

There is no abundance of materials to use in teaching English from a descriptive linguistic approach. The following list constitutes materials which are at least partially based on a linguistic approach and which might be of some benefit in teaching English on at least one of the levels to be covered by this experiment, that is the grade levels from seven through thirteen. No attempt is made to evaluate the comparative merit of these materials at the present time. In the initial preparation for conducting this experiment these materials will be evaluated by the project staff and by cooperating teachers. Those selected will then be used in actual teaching in the experimental classrooms. Those materials which prove the most usable, based on this experience; will become basic materials for the second year of the experiment. It is expected that parts of some of the materials will be more useful than other parts and selections from the materials will be made in this way.

Naturally, any new materials that may be published during the course of the experiment that seem to have application will be evaluated and tested in use. Any other materials, not here listed, which come to the attention of the investigators, will also be accorded this treatment.

Though some of the project personnel are familiar with some of these materials through extensive previous use of them in classroom teaching, no prejudgment of these materials is being offered at this time. In preparatory seminars, these materials will be evaluated and the various experiences of the project staff and cooperating teachers in the use of these materials will constitute one of the criterions for the evaluation of their potentiality for use in this experiment.

This is a list of some materials to be evaluated for possible use in this experiment:

1. Bronstein, Arthur J., The Pronunciation of American English, New York, Appleton-Century-Crofts, Inc., 1960.
2. Brown, Dona W., Brown, Wallace C., and Dudley, Bailey, Form in Modern English, New York, Oxford University Press, 1958.
3. Corbin, Richard K. and Perrin, Porter G., Guide to Modern English, Chicago, Scott, Foresman and Co., 1955.
4. English Language Institute Staff, Robert Lado, Director and Charles C. Fires, Consultant, English Pronunciation: Exercises in Sound Segments, Intonations and Rhythms, Ann Arbor, The University of Michigan Press, 1954.
5. __________, English Sentence Patterns: Understanding and Producing English Grammatical Structures, Ann Arbor, University of Michigan Press, 1957.

6. Fries, Charles C., American English Grammar: The Grammatical Structure of Present-Day American English with Especial Reference to Social Differences and Class Dialects, New York, Appleton-Century-Crofts, Inc., 1940.
7. __________, The Structure of English: An Introduction to the Construction of English Sentences, New York, Harcourt, Brace, and Co., 1952.
8. Lloyd, Donald J., and Worfel, Harry R., American English in Its Cultural Setting, New York, Knopf, Inc., 1956.
9. Myers, L. M., American English: A Twentieth Century Grammar, Englewood Clyfs, New Jersey, Prentice-Hall, Inc., 1952.
10. Roberts, Paul, English Sentences, New York, Harcourt-Brace , and World, Inc., 1962.
11. __________, Patterns of English, New York, Harcourt, Brace and Co., 1956.
12. __________, Understanding English, New York, Harper and Brothers, 1958.
13. Summey, George Jr., American Punctuation, New York, The Ronald Press Co., 1949.
14. Whitehall, Harold, Structural Essentials of English, New York, Harcourt, Brace and Co., Inc., 1956.
15. Williams, Ralph M., Phonetic Spelling for College Students, New York, Oxford University Press, 1960.

In addition to these materials, the project staff will produce new materials for classroom use. Project personnel are experienced in various aspects of material production, including modern audio-visual techniques, and part of the purposes of this experiment will be to produce new materials, based on the linguistic approach. Some material has presently been devised and used experimentally by project personnel. These materials, and the newly devised materials, will receive evaluation and testing during the course of this experiment.

Though the cooperation of the Williamsville Central School was easily secured, partly due to the fact that several of their teachers have had some exposure to linguistic training, cooperation in the city of Buffalo was impossible to secure in advance. Teachers in the Buffalo school system are generally unaware of what linguistic science has accomplished and have no idea of its pertinency to their teaching. Part of the benefits of this study would be to provide data which could be used to demonstrate to such systems the effectiveness and efficacy of these materials. Akron Central School, where one of the principal investigators taught English for five years, will also actively cooperate in the research. Several parochial schools, who have on their staffs teachers with some experience in linguistics have volunteered to cooperate in the experiment as have some other urban schools in this area. Final choice of experimental schools will be made after an evaluation of the linguistic competence of the teachers and will be based on their interest and initiative, taking care to preserve the kind of socio-economic distribution described earlier.

The control treatment will be conducted by regular classroom teachers competent in and enthusiastic about the traditional approach to the teaching of English. The treatment will consist of their normal procedures of teaching, with the exception that some units will be set up to compare as closely as possible with corresponding units in the experimental group.

Each group of students will receive its treatment for a period of one school year, as a basis for the comparative study. Data for evaluation will be collected at the end of the second year of the experiment.

The experiment will be replicated at grade 13 using four sections of freshmen at the University of Buffalo and four at the State University College at Potsdam, New York. At each institution, two sections will receive the experimental treatment and two the control treatment.

DATA TO BE GATHERED

General Criterion Data. This data will be gathered at the beginning of the second year of study (for control purposes) and at the end of the second year of the experiment. It will be assembled for both the control and the experimental groups.

1. STEP Writing Test.
2. ITED Test 3, Correctness and Appropriateness of Expression.
3. DAT Language Usage, Part II (Sentences)

These tests have been selected to serve as a measure of the relative achievements of the experimental and control groups in general language proficiency.

Specific Criterion Data. Four tests of specific content will be constructed during the first year by the project staff to test the specific areas of parts of speech, stress, spelling, and punctuation. The item pool will be based on the New York State Regents examinations in English and other recognized tests of English achievement. They will be administered at the beginning of the second year, (for control purposes) immediately after the unit of instruction, and two months later.

Attitude Data. A test will be devised to elicit, from both experimental and control students, responses indicative of the degree to which they find the study of English to be intellectually stimulating. The general nature of this test will be to ask the students to think of a series of hypothetical students with specified characteristics related to need for intellectual stimulation. For each characteristic, students will judge how well the hypothetical student would like being a student in his English class.

Intelligence Data. Scores on the Lorgo-Thornkike Intelligence Tests, Verbal Battery, administered by the project staff, will be part of the description of the sample and will be used as a control variable in later analysis. These will be administered at the beginning of the second year.

Socio-Economic Data. In accordance with the design of this project, socio-economic data concerning the areas sampled will be gathered and analyzed. The primary source of this information will be the 1960 federal census, although possibly some of the facts about the areas will have to be obtained directly from the areas. These data will include educational, financial, and occupational characteristics permitting the preparation of descriptive profiles of each community or local area. An analysis based upon comparisons of these profiles will be the final or end product, and from this it will be possible to evaluate the results of the experiment in terms of the socio-economic settings in which the experiment took place. The areas to be compared will include one urban, one suburban, and one non-urban community; although in the urban community, it will be necessary to obtain the same kind of data for local school districts. This analysis will not only insure that three distinct community levels are being dealt with, but it will also give a measure of the nature and the extent of their demographic differences.

ANALYSES

1) Test development and revision: Item pools appropriate to the various areas (see "Specific Criterion Data" and "Attitude Data" above) will be developed including about 100 items for the subject matter tests and 50 items for the "attitude" test. These tests will be administered to groups of approximately 400 students at each grade, 7, 10, and 13. Analyses of item difficulty and discrimination will be made for three levels and final forms of about 50 items (25 for the attitude test) will be devised. If necessary, two levels of the achievement tests will be prepared.

2) Performance of the experimental and control groups will be compared through the analysis of covariance with intelligence and/or pre-test achievement as the control variables. Comparison will be made of the effectiveness of the two approaches at the various grade levels and in the various socio-economic areas.

3) If adequate numbers of experimental and control students are studying foreign languages during the second year of the study, comparison of their performance in those classes will be made.

APPROXIMATE TIME SCHEDULE

Summer, 1962
- Evaluation of existing linguistically-based materials
- Selection of materials to receive classroom testing
- Making preliminary selection of teachers to conduct experimental and control treatment

Fall, 1962
- Conduct teacher-training seminar for experimental teachers
- Conduct experiments to evaluate selected materials and to train experimental teachers in teaching the linguistic approach

Spring, 1963
- Evaluate materials tested, and determine need for new materials
- Make final selection of teachers for experimental and control treatments

Summer, 1963
- Analysis of experiment for first year
- Determination of necessity of further teacher-training sessions
- Final preparation of new materials to be introduced

Fall, 1963
- Administration of pre-tests of intelligence and achievement
- Revision and administration of staff-constructed tests

Spring, 1964
- Administration of criteria instruments

Summer-Fall, 1964
- Analysis of data (comparative achievements of experimental and control groups on all tests and controls)
- Evaluation of previously published materials
- Evaluation of new materials introduced
- Evaluation of teaching methodology
- Evaluation of teacher and student motivation for acceptance or rejection of linguistically-oriented materials

December, 1964
- Completion of preparation and submission of final report

EXPECTED END PRODUCT

The end product of this research program will be a report which will contain the substantive data about the efficacy of the linguistic approach to the teaching of English, under varied conditions, as taught by regular, though specifically trained teachers. At the present time there is a considerable debate concerning the possible merits of the linguistic approach to teaching English. In the fields of foreign language teaching and teaching English as a foreign language, the pertinency of the linguistic approach is self-evident and its use is more nearly an accomplished fact. While the linguistic approach to the teaching of English has found some enthusiastic adherents, the great number of primary and secondary English teachers have not heard of the achievements in linguistics, and if they have, they have developed a skeptical attitude at best or an antagonistic attitude at worst. The data which will be provided by this experiment will be a major step in resolving this debate. If the linguistic approach can produce an improvement in student achievement, the data of this experiment should demonstrate it quite conclusively. It is significant, we believe, that the actual experiment (the classroom teaching) will be carried on by regular teachers of English, not by linguists. We believe that the controls instituted in this experiment will produce results that will be valid for evaluating the results of using the linguistic approach in the English classroom.

I. Background. Justification for extending the project for another academic year must be seen in terms of the original aims. These were expressed in the abstract of the original application dated March 30, 1962, quoted below for reference.

> "Objectives. The objectives of this study are to test the relative merits of the linguistically-oriented approach to the teaching of English (for grade levels nine through thirteen); to evaluate existing materials; to test selected materials; to determine what new materials are needed; and to devise and test new materials. The significance of this research would be to determine the extent that the application of descriptive linguistics can be of benefit in achieving and, if possible, surpassing the traditional goals of instruction in English.
>
> The pertinency of the linguistic approach to the following areas of English instruction will be evaluated: spelling, punctuation, grammatical analysis (especially for the purposes of correcting student writing), stress, and dialect control.
>
> Procedures. The first of the two years of the project will be devoted, primarily, to evaluating and testing existing linguistically-oriented materials and to devising and testing new materials. This will also be a time of intensive training in linguistics and the use of linguistic materials for teachers selected from cooperating school systems representing an urban, suburban, and rural setting.
>
> During the second year of the experiment, experimental and control groups will be set up at grade levels nine, eleven and thirteen, in shcools (and two colleges) in each of the areas described above. Students will be pre-tested for English proficiency and knowledge of specific content areas through the use of standardized and especially constructed test materials. The second year will be devoted to presenting new materials to the experimental group. The control group will receive the regular traditional English instruction by teachers selected for their enthusiasm and for competence in the traditional approach to English instruction. At the end of the year, the students will be re-tested for measurement of development in English proficiency and for retention of specific content of instructional material. Intelligence tests will be administered to serve as a control variable. The general and specific achievements of the two groups will then be evaluated for statistical determination of the relative efficacy of the two approaches. Socio-economic background and intelligence will serve as control variables in the analysis of the experimental results."

II. Progress to date and preliminary findings. In-service training courses for both the experimental and control groups were set up and administered during the first year of the program. These consisted of weekly sessions for both groups and of occasional Saturday meetings when outside speakers were brought in to discuss the problems of English instruction either from a linguistic point of view, for the experimental groups, or from a traditional point of view, for the control groups.

The generalized tests of English proficiency described under General Criterio Testing in the original proposal were administered to both groups of students in the fall of 1963. These tests have been scored and the results are being arranged for statistical analysis. Specially constructed tests, listed under Specific Criterion in the proposal, have been devised by the project personnel, pre-tested, for item analysis, and administered on a pre- and post-test basis in regard to particular areas of instruction in normative placement of stress, spelling, punctuation, and knowledge of grammatical structures.

During the course of the first and second years of the experiment, a complete set of new instructional materials for the teaching of English from a linguistic approach was developed. A teacher's text for the use of these materials, based on the in-service training course that was given to experimental teachers during the first year of the project, has also been written.

Exhibit B of this proposal contains a portion of the teacher's text that has been produced under this project and Exhibit C contains many of the units that have been developed for instructional purposes. Exhibit D contains some of the tests that have been developed for specific criteria. To understand the complexit of the experimental teachers' problems, a description of the course presented in the experimental classes is pertinent. The course began with the history of the English language and an orientation to the anthropological view of language. It was felt that this was an important and necessary unit to correct the general misconception that language and writing were simultaneous inventions and other such myths. It is important that students acquire a realistic orientation to language and its nature in the kind of framework that would constitute a contribution to their general education, rather than to be exposed to a specific set of facts about language itself, without any orientation.

Among the presentations were the linguistic structure of English, starting with an analysis of phonology and the relationship of paralanguage and kinesics t language, as part of the communication system. The analysis of the English phonemic system was presented not only for its general educational values but also as a basis for a new approach to some of the problem areas of English instruction. Students in the experimental classes became able to recognize phonemic contrasts and to transcribe phonemically.

The segmentation of English words has been analyzed in greater detail and with more consistency than ever previously achieved. This has practical implications in understanding the placement of stronger stress in English. The unit on the normative placement of stress presents this new analysis of English segments and applies these principles to the understanding of stress placement in English. This unit also builds on the analysis of English suprasegmentals presented in the unit on English phonology.

Though some linguistic work has been done showing the correspondence of English phonemes and the many and varied ways that they are presented in the English spelling system, the project has entertained an entirely new concept in regard to the question of spelling. This is the assumption that English spelling attempts to represent English morphophonics rather than English phonemics. The area of morphophonic analysis has been traditionally a problematic one in linguistic analyses. This level attempts to show how phonemic distinctions coalesce into non-contrasting units on the next higher level of analysis. An understanding of morphophonics is essential for an understanding of how individuals calibrate for dialect variations and are still able to understand the basic communications transmitted by language. An understanding of this level also presents real insights in regard to English spelling. Our spelling system, for the past 300 years, has not attempted to graphically represent each dialectical pronunciation; rather it attempted to symbolize the underlying unit of structure. This is the morphophone. As students are introduced to this level of analysis and its relation to spelling is demonstrated, a more comprehensible approach to spelling, with many fewer inconsistencies, is achieved, which should result in an improvement in spelling habits.

The problems of punctuation are analyzed from the point of view of devising a system of punctuation which a writer can use to force a reader mentally to repeat the intonation pattern he had intended. Psychologists have demonstrated that a mental act of reproducing spoken language takes place every time the written page is "read". As the intonation pattern represents that level in spoken language which punctuation attempts to reproduce in written conventions, an understanding of the intonation pattern is essential. This unit then proceeds to show how various structural units are orally punctuated and how these may best be systematically reproduced in punctuation. This unit represents an advance over any previous attempt to introduce linguistic concepts to the problems of punctuation. All earlier efforts were satisfied to vaguely call attention to some sort of correlation between "pause", which is paralinguistic rather than a part of the linguistic system itself, and the use of the comma, whereas this unit presents an actual analysis of the significant oral signals of intonation (both linguistic and paralinguistic) that may be used as a reasonably reliable guide to some of the problems of punctuation.

This linguistic grammar devised by project personnel represents an analysis of English that is a departure from any previously published tests. It is the first linguistic grammar to integrate all of the levels of linguistic analysis. The significance of this may be seen in the fact that a speaker of language must have internalized all of the levels of language and that when he communicates he uses the system as a totality. Though their systems are radically different, both the Fries word order approach and the Chomsky transformational one really ignore all levels of linguistic structure except the syntactic. While it is true that each level must be analyzed on its own, the levels are constantly inter-acting. The system presented by this project takes full account of all functions on each level and of their interactions. A single example: to understand the functioning processes within the syntactic frames and the functioning processes between the syntactic frames, it is necessary to understand the phonological basis of composition. In the Fries syntax, anything that can be substituted in one frame is the same. If you take the syntactic superfix, based on the suprasegmentals, into account, you can further refine this syntactic frame and make structural distinctions not possible through an analysis of word order alone. The integration of all levels of linguistic analysis that build into syntactic distinctions is the contribution of this approach to English syntax.

This syntax, presented as basic sentence formulas and their compositions, can then be used by teachers in criticism of student writing. Instead of such a notation as "this is an awkward sentence.", the structure of the students' sentence may be shown, without a long exposition, with suggestions of the type of syntactic structure that would result in more precise expression. Such a basic framework allows for many types of exercises not possible with traditional grammar. For instance, students who do not seem to be able to handle certain kinds of constructions well, can be given extra exercises in developing those kinds of patterns to expand their stylistic repertoire. A correction guide is provided for teacher's use; this includes basic syntactic formulas against which they can check student writing.

In addition to these basic units, the project has also developed others that are of interest to many teachers. These include an application of linguistic principles to the problems of effective speech and an analysis of poetic devises (prosody) through an understanding of English intonation.

III. Justification for continuation of project. It is then proposed that by amending the contract to extend the project for another academic year, the experimental teachers could present the linguistic approach more efficiently and more effectively. Despite the complexity of this approach and its utter newness to the teachers involved, a marked enthusiasm has developed. These teachers are eager for a second year for presentation of the materials, under similar conditions of control. They tend to lack the confidence necessary to insist on this approach as a continuing method without the reinforcement of one more year of experience. Though they feel no necessity of further proof as individuals, they recognize the need for further evidence to convince their administrators.

The statistical evaluation of the two years of experimentation would give a wider basis for a judgment as the relative effectiveness of the two approaches and would further give a judgment as to the effectiveness of the linguistic approach in the first year of its application in contrast to later efforts. A second year of classroom use would also allow the opportunity for more evaluation of the grade level suitability of the various units.

A great deal has been learned about the presentation of linguistics and all materials would, when necessary, be revised on the basis of the reactions to this initial presentation in the classroom. The materials themselves would then have had the benefit of refinement through use and would be more on a par with traditional materials. Control teachers also have had the benefit of many years of using thier particular approach and refining it to suit their personalities and teaching techniques.

Because most of the experimental teachers have displayed a high degree of enthusiasm and have asked to continue the experiment, very few, if any, would be lost to the project if it were continued another year.

It is not known, presently, whether all of the cooperating control groups would want to remain in the experiment a second year. However, several additional school systems have expressed an interest in participating in the program and a change in the control groups would in no way have an undesirable effect on the program. The new control groups would receive the same in-service training as the present groups had, by the same competent individuals, and as they will be doing what they normally do, and at which they are competent professionally, it would in no way invalidate the results or decrease the amount of information that can be gathered from the project.

It was originally anticipated that a socio-economic profile of the students involved in all control and experimental groups would be obtained from census data. However, because school district boundaries and census tract areas do not correspond, this was not possible. A questionnaire was devised to obtain the information directly from the parents of all the students in both the experimental and control aspects of the project. A complete analysis of the information thus obtained has not been completed but preliminary observation indicates that there is not as much socio-economic variation as was foreseen, even though the schools selected for the project were chosen because they ranged from a privileged suburban environment to small town high schools in basically rural areas. The educational level of the parents, as an example, does not vary as much as would be anticipated by the physical environment.

IV. New dimension to the program. In-service training was required for the experimental groups because at the time of the inception of the program, materials for teaching from the linguistic approach were scarce. In setting up two experimental groups at the State University of New York College at Geneseo at the thirteenth year, these teachers will not receive an in-service training course in linguistics. They will only have two or three orientation sessions providing an opportunity to ask questions about the materials, the testing program or general linguistic theory. The information they need for carrying on the program is provided in the teachers' text developed for the project, and in the guides that accompany each instructional unit, all devised by the project personnel.

APPENDIX 2

Appendix 2 is the Project text, A Linguistic Approach to English. Because of its large bulk, it was not possible to bind it with this final report. It is on file with the U. S. Office of Education and is available through them. The Project also developed a text for the training of teachers in English linguistics titled English Structure and the Teaching of English, by Henry Lee Smith, Jr. and Henry J. Sustakoski. Copies of this text are also on file with the U. S. Office of Education. For further information concerning these materials, you may also write to Professor Henry J. Sustakoski, Department of English, State University College, 1300 Elmwood Avenue, Buffalo, New York 14222. A guide for each chapter also accompanies A Linguistic Approach to English.

APPENDIX THREE

Included in this Appendix are sample copies of the tests and other evaluative material described in Sections 2.4. and 2.5. of the report. Because of the limitation of space, only one copy of each test is included (tests given before and after each unit were constructed similarly, with only the item, words and/or sentences, being changed). The MLAT, ITED, Lorge-Thorndike, and STEP tests are not included here because, as the report states, these are standardized objective tests which are commercially available.

NAME ____________________
SCHOOL ____________________ GRADE ________
TEACHER ____________________
CLASS English PERIOD ________

GENERAL PRE-TEST

DIRECTIONS:

Fill in the above information completely. In the CLASS space add the number of your English Class — English III, English IV, for example — indicate the period when you have the course. After you have finished the test, turn it in to your teacher.

On the following page you will find an unpunctuated 3-paragraph story. You will be asked to do the following things:

(1) Punctuate the paragraphs and put capital letters where they are needed. CAUTION!!! Be sure that each group of words you set off as a complete sentence makes sense. In short, READ CAREFULLY.

(2) Write the correct spelling immediately above all misspelled words; for example:

exaggerated
exagerated

(3) Above all words which are underlined with a solid line, write the part of speech; for example:

noun
boy

(4) Above all words which are underlined with a broken line, write the sentence part; for example:

subject
school

TIME:

You will have the entire class period to complete this test. Work carefully and be sure that you have answered all the points listed above.

Ron and bill these were the arch rivals of rader high school and they were brothers ron exceled in his studies only one girl karen giving him an admirable tussle for class honors bill on the other hand took most of the athletic honors however it must not be suppose that theirs was the exaggerated rivalry between clumsy bookworm and stupid sports star their parents had early emphisized by example that mind and muscle can and should mix they were interested and versed in a variety of things diner table conversation at the brenskis was always lively family activities collective and personel were wholeheartedly pursued succes was judged to lie in a balance among the physical mental and moral sides of a person since the two boys enjoyed such beneficent influences both became comparably apt in studies in sports in the arts and in discharging duties to which they were asigned or elected.

The rivalry really came to full focus beyond high school for both boys wished to attend the same college tuscarora university to major in the same field political science and to aquire sizable scholarships to offset the family's modest income they did not think one school could accomodate so many conditions to be on the safe side they applied to several colleges they and their parents had interviews at tuscarora and elsewhere the weeks of anxious waiting stretched into months nevertheless the april 1st decision date arrived at its usual time ron and bill recieved separate tuscarora letters with surely you guessed it identical scholarship offers.

You will feel that this is a corny story with a much to happy ending it is but it is also a categorically true story the boys found out later from the proffessor who was named their advisor that a complex of factors other than grade point standing are considered so that the student body will be a well-rounded broadly representative one.

Diagnostic Test 1/65 - SPELLING
Time: 25 - 30 minutes

EXAMINER'S MANUAL

1. Remind the students to give the following information in the space provided: name, book (or identification) number, grade, teacher, period and school.

2. Read the following instructions aloud, asking the students to follow on their answer sheets:

   > Your teacher will read 100 words to you. Each word will be read three times: once by itself, a second time in a sentence and a third, final time by itself. Do not ask for additional repetitions. You are to write the word in the appropriate place on this sheet.

3. Use the list of words in this manual, reading them aloud.

   Allow approximately 15 seconds for the 3 readings. At four (4) words a minute, the test should take 25 minutes to complete. DO NOT repeat a word more than three times.

4. IMPORTANT: When reading the words, use a normal tone of voice. Pronounce the words as you normally would, and at a normal rate of speed. Above all, do not use a special "spelling pronunciation" -- e.g. do not pronounce the p in pneumonia or the t in wrestler. In short, try to be impartial but accurate in your pronunciation of all words. Don't give the students any extra clues!

Diagnostic Test [illegible] - SPELLING
Examiner's Manual

1. rabbit - The magician used a rabbit in his act.
2. orator - Daniel Webster was a famous orator.
3. interrelationship - There is an interrelationship between the arts and sciences.
4. corrupt - The government was corrupt.
5. tying - They were tying their shoes.
6. thorough - I made a thorough study of it.
7. thinning - His hair was thinning.
8. benefit - He attended a benefit performance.
9. decision - Her decision was incorrect.
10. unnecessary - This is unnecessary.
11. varies - The payment varies.
12. practical - What a practical solution!
13. mere - The mere idea frightens me.
14. exercise - You need more exercise.
15. permission - She had permission to go.
16. hungrily - We ate hungrily.
17. mechanics - The mechanics of the project is involved.
18. omit - Don't omit the comma.
19. actual - The actual truth is amazing.
20. symbol - This symbol is new.
21. laborer - The laborer was late.
22. benign - He was a benign ruler.
23. various - There are various ways to solve this problem.
24. roommate - Her roommate was attractive.
25. regard - With regard to that, I agree.
26. accustom - You must accustom yourself to the idea.
27. arouse - This will arouse their anger.
28. operate - How do you operate that machine?
29. suppress - He tried to suppress his joy.
30. ninety - Ninety people were present.
31. difference - It makes no difference.
32. using - You should be using a typewriter.
33. imaginary - Scarlet O'Hara is an imaginary person.
34. acquire - It is difficult to acquire great wealth.
35. success - His success was unusual.
36. ascertain - Can you ascertain the truth?
37. commence - We will commence the lesson now.
38. forecast - The weather forecast was not good.
39. antecedent - The word "Bill" was the antecedent.
40. gauge - The air gauge was broken.
41. rhetoric - Rhetoric is an interesting study.
42. ecstasy - The cheering fans were in ecstasy over our victory.
43. undoubtedly - They will undoubtedly arrive late.
44. dining - The dining room is to your left.
45. decent - All decent citizens were aroused by the outburst.
46. really - It is really surprising.
47. dubious - He gave them a dubious look.
48. guarantee - It has a 90-day guarantee.
49. tariff - The tariff laws are often changed.
50. antidote - There is no antidote to some poisons.

agnostic Test 1/65 - SPELLING
aminer's Manual

1. different - This story is different.
2. principle - This is a principle of physics.
3. procedure - Follow the procedure.
4. together - Let's go to the show together.
55. shining - The sun was shining.
56. pneumonia - Have you ever had pneumonia?
57. personnel - He was directed to the personnel office.
58. foreign - She was foreign to our ways.
59. similar - Their ideas were similar.
60. conscience - His conscience got the better of him.
61. inflammable - The liquid is inflammable.
62. refer - Refer him to me.
63. weird - It was a weird experience.
64. whose - Whose book is this?
65. niece - She is my niece.
66. familiar - It was a familiar face.
67. referring - They were referring to you.
68. villain - The villain always has a long mustache.
69. sophomore - He is a sophomore.
70. deference - He should give deference to the chairman.
71. leanness - Leanness is a result of starvation.
72. personal - It was a personal discussion.
73. strength - He had the strength of Hercules.
74. parallel - The roads were parallel.
75. opinion - What is your opinion?
76. divide - Divide two by four.
77. criticism - Newspapers are a means of criticism.
78. category - Place them in order by category.
79. possess - Did you ever possess a diamond?
80. repetition - Repetition is monotonous.
81. psychiatry - Psychiatry is a branch of medicine.
82. democratic - We have a democratic government.
83. luxury - Furs are a luxury.
84. disastrous - It was a disastrous fire.
85. breathe - The air we breathe contains oxygen.
86. misstate - Do not misstate the question.
87. embarrassing - It was an embarrassing situation.
88. absorption - Sand has great powers of absorption.
89. deferred - He was deferred by his draft board.
90. cruelly - He was cruelly treated.
91. dissimilar - The problems are quite dissimilar.
92. re-enter - The space capsule attempted to re-enter.
93. diplomatic - It was a diplomatic answer.
94. fantasy - Ghost stories are considered a fantasy.
95. vulgar - Some remarks are vulgar.
96. hindrance - Poor sight can be a hindrance.
97. wrestler - He is a champion wrestler.
98. assignment - It was a difficult assignment.
99. irregular - The lengths proved to be irregular.
100. territory - He lives in the Yukon territory.

Buffalo English Linguistics Project

SPELLING AND NORMATIVE STRESS DIAGNOSTIC TEST

PART II. NORMATIVE STRESS

DIRECTIONS: Please read carefully.

What your task is: On the following pages there are 50 sentences. In each sentence one word or phrase is underlined. Above the underlined word(s) are a series of numbers. Each number indicates the syllable in the underlined word(s) immediately below that number. You are to indicate on side 2 of your answer sheet which syllable of the underlined word(s) has the strongest stress or accent on it. Do so by blacking in the appropriate space.
NOTE: READ EACH SENTENCE TO YOURSELF BEFORE ANSWERING, DO NOT SIMPLY READ THE UNDERLINED WORD ALONE.

SAMPLE QUESTION: Please read carefully.

1. He was a formidable adversary.

Find number 1 on your answer sheet and blacken in the space of your choice. In this case you should blacken in space 1 of number 1, since adversary is stressed on the first syllable.

TIME: You will have 10 minutes for this part of the test. Answer every question, but give only one answer for each question. You may go back to recheck your answers.

DO NOT TURN TO THE NEXT PAGE UNTIL INSTRUCTED TO DO SO AND DO NOT MARK IN THIS BOOKLET.

1 2
1. His progress was amazing.

1 2
2. The White House is in Washington.

1 2
3. They live in a white house.

1 2
4. We will progress to the very end.

1 2 3
5. She is very impulsive.

1 2
6. He was compelled to go.

1 2
7. The complex of buildings was close by.

1 2
8. He used to sell produce.

1 2
9. I am a rebel.

1 2
10. Four-and-twenty blackbirds baked in a pie.

1 2 3
11. The Institute is quite wealthy.

1 2
12. He sells oriental imports.

1 2
13. The overlap was great.

1 2
14. She is a convert.

1 2
15. He is a leading suspect.

1 2
16. It's a difficult food to digest.

1 2 3 4
17. Are two books comparable to three?

1 2
18. They will produce good results.

1 2 3
19. The party was escorted by a guide.

1 2 3 4
20. Evidently he wished to go.

1 2
21. He will convert it to cash.

1 2
22. Do you like this digest of stories?

1 2
23. Why shouldn't we rebel?

1 2
24. In this extract are three liquids.

1 2 3
25. His caloric intake is sufficient.

1 2 3 4 56
26. This is not a totalitarian form of government.

1 2 3
27. He was a success as a financier.

12 3 4
28. His biography was well written.

1 2
29. Do you suspect him?

1 2 3
30. The two schedules overlap.

1 2
31. I will import it from Hong Kong.

1 2 3 4
32. The nativity scene was beautiful.

1 2 3
33. The doctor has eccentric ways.

1 2 3
34. She was quietly traversing the plaza.

1 2
35. Don't subject him to that.

1 2 3 4
36. Their courage was admirable.

1 2
37. Our know-how should be greater.

1 2 3 4
38. Water has a simple chemical composition.

1 2 3
39. Have you studied integral calculus?

1 2
40. The Congress will recess next month.

1 2
41. Which annex of the building is it in?

1 2
42. She didn't have an escort.

1 2
43. Please don't absent yourself from class.

1 2
44. The dentist will extract your tooth.

1 2 3 4
45. This seems an equitable settlement.

1 2 3
46. She will be presented to the director tomorrow.

1 2 3 4
47. We went through various machinations to get it done.

1 2 3 4
48. After three years in prison, he looked cadaverous.

1 2 3 4
49. Anecdotal accounts should be carefully written.

1 2 3 4
50. Herbs have medicinal properties.

Diagnostic Test 2/65 - PUNCTUATION
Time:35 minutes

Score: ____________

Name: ____________
Book No. ____________
Grade: ________ Teacher: ____________
Period: ________
School: ____________

BUFFALO ENGLISH LINGUISTICS PROJECT

PUNCTUATION

PART I. INTERIOR PUNCTUATION

Directions: On the following pages you will find fifty sentences. You are to give interior punctuation (commas, etc.) where needed. There are sentences which call for one or more punctuation marks; there are also sentences which require no punctuation. Write directly in the test booklet. No rewriting is necessary or acceptable.

Sample Sentences:

If he comes, tell him that I had to leave.

We caught him in the act -- sucking his thumb.

The mayor, an Independent, will run again.

The mayor -- he is in his second term -- will run again.

He is an old line Bostonian; she is a true Southern belle.

The man who came to dinner stayed six months.

Part II. INTERIOR AND TERMINAL PUNCTUATION

Directions: On the last page of the booklet is an unpunctuated continuity paragraph in story form. Punctuate it, placing capital letters at the beginning of sentences; terminal punctuation (periods, etc.) at the end of sentences; and any interior punctuation needed. Write directly in the test booklet. No rewriting is necessary or acceptable.

Time: The test has been designed for completion in a 35-minute class period. Do not stop between Parts I and II. You may go back to recheck or change your answers, if you have time.

WARNING: Your score will be figured as the maximum number of correct items minus the number of your errors. Each mark counts as one item. Do not add unnecessary marks, as they will count as errors.

TURN THE PAGE AND BEGIN WORK ....

1. Here is the spot where the car left the road.
2. What are our chances of winning would you say?
3. I do not agree with every part of the project nevertheless you can count on my cooperation.
4. Because of the extreme cold the parade has been postponed.
5. The house dilapidated and musty held little promise of comfort.
6. Marjorie will not delegate duties since she has never had to.
7. She is not an actress she is a dramatic singer.
8. Rallying after the operation he gradually regained his strength.
9. The guidance counselor exploring the possibilities in the field urged him to take his time about choosing a school.
10. Other things being equal we shall reach Mesa Verde on Thursday.
11. Call me Pete when you get back.
12. Singing madrigals is more enjoyable than listening to them.
13. Weather permitting the picnic will begin at two o'clock.
14. You are I feel sure on the wrong track entirely.
15. How you do a thing is what's important.
16. However we do it we must get the supplies through.
17. Good manners she has beauty she has not.
18. My brother learned how to swim how to identify common plants and how to shoot with bow and arrow.
19. Tom or maybe it was Bill left his gloves here.
20. The year after he spent hours on end revising the introduction.
21. The Democrats pushed the measure the Republicans on the other hand requested more time for consideration.
22. Martha told Peg the program would go on as scheduled.
23. When he will arrive is still uncertain.
24. The graph every vital statistic was there had to be explained by the statistician.
25. Thackeray turned down as illustrator of Dickens later became a fine novelist.
26. All the passengers had moreover been instructed in the use of the oxygen equipment.
27. He was quoted as follows I shall never fail to uphold any principle of the UN Charter circumstances permitting.
28. Joyce first selected a record for her brother then she bought a blouse for her mother finally she decided on a tie for her father.
29. He refused to apply himself in practice as a result he was dropped from the squad.
30. Holly with characteristic frankness announced her engagement.

DO NOT STOP. GO ON TO THE NEXT PAGE.

31. James having written an excellent story won a trip to Europe.
32. Angelo was voted Senior of the Year the boy most likely to succeed.
33. Red Creek next stop on our trip was ten miles down the road.
34. Any student who fails this test has not read the text.
35. Just when all seemed lost Barnes shook loose for the tying tip-in.
36. If our defensive line comes through we have a good chance of winning.
37. The new plane has been pronounced safe as it came through all the tests well.
38. In the old year we tried in the new we hope to do better.
39. Home whatever you may say is where the heart is.
40. God Willing we'll be there is good time.
41. Operating a lathe can be absorbing.
42. Just speak for yourself son.
43. If Lee comes he said so will I.
44. However the match comes out we must remain friends.
45. All the musicians arrived early and the concert began promptly.
46. For summer pleasure can be found at the seashore or in the mountains.
47. Whether to take an earlier plane is a question for you to decide.
48. Tanbark Towers is a middle income housing development Airy Acres a development for the retired.
49. He has worked on that experiment since he came in this morning.
50. He named the following to the board Henry Sykes a Democrat Peter Cartright a Republican and Sanford Nash an Independent.

DO NOT STOP. GO ON THE THE NEXT PAGE.

Diagnostic Test 2/65 - PUNCTUATION
Time:35 Minutes

EXAMINER'S INSTRUCTIONS

1. Please remind the students to write their names, book (or identification) number, grade, teacher, period in the space provided.

2. Read the following instructions before the students begin the test:

> You will be given 35 minutes to complete this punctuation test. Please read the instructions and study the examples on page 1 before starting work on the test. Do not stop at the end of the first section -- continue through to the end of Part II.
>
> Please note the warning at the bottom of page 1: both omitted punctuation and extra or unnecessary punctuation marks will count as errors. Do not add extra marks unless you know they are needed.

There they were caught in the covered bridge with the train speeding toward them should they run and try to make the farther end should they jump through one of the small windows or a third possibility that suddenly occurred to Mike could they flatten themselves so tightly against the wall that their clothes would not catch in the speeding monster these were however the lightning thoughts of a moment with Tommy limping both could not hope to reach safety Mike pulled Tommy back against the already trembling wooden wall brushed the clothes of both flat took Tommy's hand tightly in his own closed his eyes and prayed the engine dove into the shaking bridge and was past one car two cars he counted them off then after the first shock they could see the cars clipping by Mike dared not look to see how long the train was or even to smile at Tommy he suddenly sensed that Tommy was falling so he too slumped into a crouch meanwhile forcing his arm under Tommy's chin nearly choking him the roar stopped as quickly as it had begun Tommy sputtered slid to the ground thank God they were safe Mike knew now what it is like to experience the kind of thrills he had often encountered in books and movies.

Buffalo English Linguistics Project

IDENTIFICATION OF WORD SEGMENTS AND WORD TYPES DIAGNOSTIC TEST

PART I. WORD SEGMENTS

DIRECTIONS: Please read carefully.

You are about to read 5 sentences, each of which contains words composed of various types of word segments. After you have read each sentence you will be asked to indicate for each sentence the total number of: (1) primary bases, (2) prebases, (3) non-derivational affixes, (4) postbases, and (5) paradigmatic suffixes, in that order. You will have answered a total of 27 questions, including the sample questions. You are to mark your answers on the answer sheet.

SAMPLE QUESTIONS: Please read carefully.

The boys seemed submerged in work.

In the above sentence indicate the number of:

1. Primary bases (bound or free).
2. Prebases.

Find number 1 on your answer sheet and actually blacken in the space of your choice. In this case you should blacken in space 6 next to number 1, since there are 6 primary bases in the above sentence (indicated by ⎴ in this sample). Do this now on your answer sheet. Now do the same for number 2. Blacken in space 1 next to number 2, since there is only one prebase, sub-, in the above sentence. If your answer to any question is 0 (zero) do not blacken in any answer square for that question.

TIME:

Try to be finished with Part I in about 15 minutes. When you are finished, stop. Your teacher will tell you when the 15 minute period is up. Work carefully and think about each item, but do not spend too much time on any one item. If you need scratch paper, an extra sheet has been provided -- use only this paper to figure on. Answer every question, but give only one answer for each question. If you have time you may go back to recheck your answers.

DO NOT TURN TO THE NEXT PAGE UNTIL INSTRUCTED TO DO SO AND DO NOT MARK IN THIS BOOKLET.

ART I

Begin with Number 3 on your answer sheet.

> It is considered of strategic importance.

In the above sentence indicate the number of:

3. Primary bases (bound or free).
4. Prebases.
5. Non-derivational affixes.
6. Postbases.
7. Paradigmatic suffixes.

> An equitable solution is often complex.

In the above sentence indicate the number of:

8. Primary bases (bound or free).
9. Prebases.
10. Non-derivational affixes.
11. Postbases.
12. Paradigmatic suffixes.

> Most commentaries of the times criticize totalitarian governments.

In the above sentence indicate the number of:

13. Primary bases (bound or free).
14. Prebases.
15. Non-derivational affixes.
16. Postbases.
17. Paradigmatic suffixes.

DO NOT STOP. GO ON TO THE NEXT PAGE.

Gengis Khan was an infamous and barbaric leader.

In the above sentence indicate the number of:

18. Primary bases (bound or free).

19. Prebases.

20. Non-derivational affixes.

21. Postbases.

22. Paradigmatic suffixes.

She maintained that a percolator was much better.

In the above sentence indicate the number of:

23. Primary bases (bound or free).

24. Prebases.

25. Non-derivational affixes.

26. Postbases.

27. Paradigmatic suffixes.

STOP. DO NOT GO ON TO PART II UNTIL YOU HAVE BEEN INSTRUCTED TO DO SO.

PART II. WORD TYPES

DIRECTIONS: Please read carefully.

You are about to read 9 sentences, each of which is composed of several different word types. These word types are listed below. After you have read each of the 9 sentences you will be asked to indicate for each sentence the total number of:

(1) true words (that is, consisting of a primary base with or without paradigmatic suffixes); e.g., boy, boys .

(2) phrase words (that is, consisting of one primary base plus one or more pre- or postbases or non-derivational affixes); e.g., boyish, compel, specify .

(3) word phrases (that is, consisting of more than one primary base with or without one or more other segment types); e.g., lighthouse .

You will have answered a total of 27 questions, including the sample questions. You are to mark you answers on the answer sheet.

SAMPLE QUESTIONS: Please read carefully.

x x x x x x x x
The branch of physics which deals with sound is acoustics.

In the above sentence indicate the number of:

1. True words.

2. Phrase words.

Find number 1 in Part II on your answer sheet and actually blacken in the space of your choice. In this case you should blacken in space 8 next to number 1, since there are 8 true words in the above sentence (indicated by "x's" in this sample). Do this now on your answer sheet. Now do the same for number 2. Blacken in space 2 next to number 2, since there are only two phrase words in the above sentence, physics and acoustics, both containing a primary base, the non-derivational affix ic, and the noun-indicating postbase -s. If your answer to any question is 0 (zero), do not blacken in any answer square for that question.

TIME:

Try to be finished with Part II in about 15 minutes. Work carefully and think about each item, but do not spend too much time on any one item. Answer every question, but give only one answer for each question. You may go back to re-check your answers in either Part I or Part II if you have time.

DO NOT START TO WORK ON THE NEXT PAGE UNTIL INSTRUCTED TO DO SO.

DO NOT MARK IN THIS BOOKLET.

PART II

Begin with Number 3 on your answer sheet.

> The branch of physics which deals with sound is acoustics.

In the sentence above indicate the number of:

3. Word phrases.

> Five-act plays are considered too long by most professional playwrights.

In the sentence above indicate the number of:

4. True words.
5. Phrase words.
6. Word phrases.

> Certain resonance effects are eliminated by the capacitor's ceramic feed-thru and stand-off.

In the sentence above indicate the number of:

7. True words.
8. Phrase words.
9. Word phrases.

> The shortstop was asleep on that play.

In the sentence above indicate the number of:

10. True words.
11. Phrase words.
12. Word phrases.

DO NOT STOP. GO ON TO THE NEXT PAGE.

A nation may be viewed as the embodiment of a political concept.

In the sentence above indicate the number of:

13. True words.

14. Phrase words

15. Word phrases

Any changes in personnel can easily become a "sholseup".

In the sentence above indicate the number of:

16. True words.

17. Phrase words.

18. Word phrases.

We design and manufacture advanced data-handling equipment.

In the sentence above indicate the number of:

19. True words.

20. Phrase words.

21. Word phrases.

It takes nerve to make that first parachute jump.

In the sentence above indicate the number of:

22. True words.

23. Phrase words.

24. Word phrases.

DO NOT STOP. GO ON TO THE NEXT PAGE.

The Trans-Jordanian capital underwent an eleven-day siege.

In the sentence above indicate the number of:

25. True words.

26. Phrase words.

27. Word phrases.

Diagnostic Test 3/65

Name: ______________________________
Book No.: ______________________________
Grade: ________ Teacher: ______________
Period: ______________________________
School: ______________________________

BUFFALO ENGLISH LINGUISTICS PROJECT

PARTS OF SPEECH

Directions: Identify the following words as specific parts of speech -- as you have learned to identify them in your English class this year. In the blank to the left of each word write out the name of the part of speech. Do not use abbreviations for the names of the parts of speech. You may indicate a word as two parts of speech, if it may serve as two.

1. ______________________ when
2. ______________________ shopping
3. ______________________ usually
4. ______________________ was
5. ______________________ the
6. ______________________ but
7. ______________________ patterns
8. ______________________ recovered
9. ______________________ here
10. ______________________ neither
11. ______________________ smaller
12. ______________________ you
13. ______________________ careful
14. ______________________ parentheses
15. ______________________ where
16. ______________________ spelled
17. ______________________ boy's
18. ______________________ this
19. ______________________ never

20. ______________________________ to

21. ______________________________ tactless

22. ______________________________ thirds

23. ______________________________ goodness

24. ______________________________ rather

25. ______________________________ truth

26. ______________________________ owns

27. ______________________________ hasty

28. ______________________________ largest

29. ______________________________ criticism

30. ______________________________ personification

31. ______________________________ is

32. ______________________________ inaccurate

33. ______________________________ kolkhozes

34. ______________________________ unavoidable

35. ______________________________ ordinary

36. ______________________________ zymotic

37. ______________________________ correlative

38. ______________________________ statistical

39. ______________________________ brevity

40. ______________________________ slithy

41. ______________________________ pulling

42. ______________________________ ye

43. ______________________________ phrasal

44. ______________________________ polemic

45. ______________________________ written

46. ______________________________ revises

47. ______________________________ hoplite

48. ______________________________ invective

49. ______________________________ radial

50. ______________________________ replete

51. ______________________________ consignee

52. ______________________________ downy

53. ______________________________ mimsey

54. ______________________________ asyllabic

55. ______________________________ docile

56. ______________________________ capitulate

57. ______________________________ zealousness

58. ______________________________ loquacious

59. ______________________________ vestige

60. ______________________________ condiment

61. ______________________________ vindictive

62. ______________________________ writhe

63. ______________________________ genial

64. ______________________________ criterion

65. ______________________________ hither

66. ______________________________ spoken

67. ______________________________ garages

68. ______________________________ theirs

69. ______________________________ why

70. ______________________________ disconsolately

71. ______________________________ sociability

72. ______________________________ principal

73. ______________________________ expected

74. ______________________________ serendipity

75. ______________________________ dancing

Name: ______________________________

Diagnostic Test 4/65 - Sentence Structure

Book No. ______________________________

Score: __________

Grade: ________ Teacher: __________

Period: ________

School: ______________________________

BUFFALO ENGLISH LINGUISTICS PROJECT

SENTENCE STRUCTURE

Part I. WORD IDENTIFICATION (30 minutes)

Label the underlined words in the following passage as parts of speech according to their use in the sentences.
Use the following abbreviations:

N	Nominals (nouns, words used as nouns)
Adj	Adjectivals (adjectives, words used as adjectives)
Adv	Adverbials (adverbs, words used as adverbs)
V	Verbals (verbs, words used as verbs)
Conj	Conjunctions
Prep	Prepositions

You may also indicate other categories which you have learned in class, such as D - demonstrivals; PN - pronominals, etc.

Label the underlined words by writing the appropriate abbreviation above each.

EXAMPLE FOR PART I:

adj prep adj
Every time we avalanched from one end of the stage to the other, the unabridged
adv v
dictionary would come too; and every time it came it damaged somebody.

I.

We had had a consuming desire from the beginning,to see a pony-rider, but somehow or other all that passed us and all that me us managed to sneak by in the night, and so we heard only a whiz and a hail, and the swift phantom of the desert was gone before we could get our heads out of the windows. But now we were expecting one along every moment, and would see him in broad daylight. Presently the driver exclaims:

"Here he comes!"

Every neck is stretched further, and every eye strained wider. Away across the endless dead level of the prairie a black speck appears against the sky, and it is clear that it moves. Well, I should think so! In a second or two it becomes a horse and rider, rising and falling, rising and falling -- sweeping toward us nearer and nearer -- growing more and more distinct, more and more sharply defined -- nearer and still nearer, and the flutter of the hoofs comes faintly to the ear -- another instant a whoop and a hurrah from our upper deck, a wave of the rider's hand, but no reply, and man and horse burst past our excited faces and go swinging away like a belated fragment of a storm!

So sudden is it all, and so like a flash of unreal fancy, that but for the flake of white foam left quivering and perishing on a mail sack after the vision had flashed by and disappeared, we might have doubted whether we had seen any actual horse and man at all.

(Mark Twain, from *Roughing It*.)

Part II. PRINCIPAL COMPONENTS (15 minutes)

Divide each of these sentences into its major, or principal, components by doing the following:

(1) Draw a straight line (____________) under all words included in the subject (subject noun or pronoun, all adjectives and other modifiers, including dependent clauses, etc.)

(2) Draw a wavy line (∿∿∿∿∿∿) under all words included in, modifying, or dependent on the verb (predicate).

(3) Put all complements (direct object, indirect object, predicate noun, object complement, predicate adjective) in parentheses. If there are two complements, use two sets of parentheses.

Above the first word of each bracketed phrase, indicate its function by writing DO, IO, OC, PN or PA.

EXAMPLE FOR PART II:

IO
1. The ticket salesman, standing at the main gate, gave (the next customer)
DO
(a pair of tickets to the first performance, which begins at seven o'clock this evening.)

PN
2. Waterloo, Iowa, is (his home town.)

3. While in college, he read widely and carefully outside the field of law.

II. ____________________

1. The other night I saw a wonderful western on television.

2. During the semester his reading speed increased significantly.

3. The local boys gave the visitors a sound trouncing.

4. Normally, we would start our analysis at the finite verb.

5. Looking for trouble is the quickest way to find it.

6. Mother, what are we having for dinner?

7. A study of the Constitution which confines itself to a study of the document will give us but little insight into the Constitution itself.

8. Money cannot buy happiness, for happiness is a state of mind.

9. Back when the South was solid, King Cotton was its arbitrary ruler

10. Along the brink of the bog, picking their road among crumbling rocks and spongy patches of moss, the English soldiers were pushing fast, armed in helmets and quilted jerkins, their pikes trailing behind them.

11. You may well call it a silly joke.

12. The child hurt himself.

APPENDIX FOUR

This Appendix includes the material on socio-economic data mentioned in Section 2.5.1. of the report. It consists of two parts -- first, the project sociologist's detailed analysis of the data; and, second, a specimen questionnaire.

The study and its purpose. This study is the result of a systematic effort to determine the existence of similarities and differences in the socio-economic backgrounds of students from three separate areas in which the English-linguistics experiment is being conducted. In accomplishing this task, analysis of the directions, the nature, and the degrees of association or variation will be made -- where data allow. In the design phase of the present study, a plan was also implemented to test for significant differences between experimental and control groups regarding the same characteristics which would be used to determine differences between the areas in which the experiment was being conducted.

The English-linguistics experiment which the present study is to supplement is an extended test to determine which of two general teaching processes is most effective. The experiment is being conducted in schools located in areas initially selected as being rural, suburban, and urban. The purpose of such a selection of locations for the experiment was to maximize the socio-economic and other differences so that, irrespective of the outcome of the experiment, the results could be said to stand independently of differences in the socio-economic backgrounds of those participating. Since these areas had to be selected as early as possible, and since selection was in large part contingent upon the agreement of schools to participate, these areas were selected on the basis of past observations. The question naturally arose whether the areas selected as being significantly different from one another were actually different. Would a selection of key socio-economic facts (occupational style of life, occupational characteristics, social status, income range, educational level, spatial mobility, home ownership, linguistic background, etc.) vary with the areas of residence of participant families? Would the same facts vary according to whether the group was experimental or control? Would such variations by area and by type of group be significant? Could they be explained on the basis of chance alone?

The original plan was to obtain the factual basis for answering these and other questions from 1960 U.S. census data, but as it turned out the political and rural-urban boundaries which the census uses as enumerative units did not correspond sufficiently to our needs. Moreover, where correspondence did occur, the data were not comparable. Accordingly, it was decided to go directly to the families of the students in the experiment for an analysis of background differentials by area. A questionnaire supported by a cover letter to the parents and sanctioned by the schools in question was pre-tested, revised and distributed to 1,184 families. The data were then coded, punched on IBM cards and machine-processed.

The purpose of the present study, then, was two-fold. (1) To determine whether the areas chosen initially as rural, suburban, and urban were actually classifiable as such by our criteria. Classifiability under these three rubrics was to be determined by significant differences between the areas on the items taken as criteria (listed in the later discussion of the questionnaire under category I). (2) To determine generally and within each area whether or not background differences exist between our experimental and control groups.

The universe and extent of sample coverage. The universe consists of the families of 1,226 students taking part in the experiment. These students reside in Medina and Springville (places selected as rural), Williamsville and Kenmore (places selected as suburban), and within the city of Buffalo. Initially, Akron (rural) and Amherst (suburban) were intended as participants but due to differing circumstances,* data from these places were not obtained.

---

*Akron participated in the B.E.L.P. but did not cooperate in the socio-economic study. Amherst began but did not continue as a B.E.L.P. participant.

In the urban area, a representative cross section of schools could not be obtained (the reasons for this have been outlined elsewhere in the report). The three schools participating in the urban area are Catholic parochial and private schools. While this fact may affect the completeness of the urban sample, it must be remembered that the purpose here is primarily to demonstrate maximum differences between the three areas; if maximum differences show up on all crucial items, even though a given area may not suit its label, the categorization is statistically adequate to the purpose.

Table A. Distribution of 1,226 students by Area of Participation.

Areas and Students

RURAL		SUBURBAN		URBAN	
Place	No.	Place	No.	Place	No.
Medina	199	Williamsville	262	Bishop Turner	168
Springville	130	Kenmore	184	Bishop O'Hern	143
				Canisius	140
Totals	329		446		451

The first objective was to reach parental heads of households of the above students for background facts which could be designated by area and type of group. The most practical means for doing this was to have the teachers involved in the project distribute the questionnaires through their students to the family heads. Instructions were given to the teachers to see that only one sibling in each sibling group would receive a questionnaire (or form) to take home for completion. 1,226 forms, consecutively numbered, were distributed to teachers according to the above plan in Table A. Not knowing how many families were represented by the given number of students, each school was deliberately oversupplied and teachers were asked to return all questionnaires not distributed.

The number of distributed forms would represent the size of the universe both for the whole region and for its three parts. Then, the difference between the distributed and the returned forms would measure the extent to which we had obtained coverage of the universe.

Of the 1,226 forms given to teachers for distribution, 1,184 were distributed -- leaving 42 undistributed forms. Since the total number of children was 1,226, and the number of family units was 1,184, the estimated number of children per family participating in the survey was 1.04.

Of the 1,184 family units, 953 were actually returned, and 909 of them were either wholly or partly completed. A total of 34 were returned blank and 251 were not returned at all. Unreturned forms were randomly dispersed over the areas, but of the 34 which were returned blank, the dispersion was not random. In fact, the area selected as rural accounted for 50% of the returned-blank forms; the suburbs accounted for 35% with the remaining 15% falling in the urban area. As can be seen in the following table, the overall coverage of the universe was 80.50%, and there was no significant variation from this figure for any of the three areas tested.

Table B. Distribution of Questionnaires Given to Teachers By Areas and by Types of Returns.

AREAS	CLASSIFICATION OF FORMS							
	# Given to Teachers	# Not sent to Families	# Dist. to families by Teachers	#Return. by families Completed or not	#Return. fully or partly completed	#Return. blank by families	#Not return. by families	% of Universe covered
RURAL	329	22	307	252	235	17	55	82.08
Medina	199	1	198	158	153	5	40	79.79
Springville	130	21	109	94	82	12	15	86.23
SUBURBAN	446	8	438	336	314	12	102	76.71
Williamsville	262	2	260	217	217	0	43	83.46
Kenmore	184	6	178	119	107	12	59	66.85
URBAN	451	12	439	365	360	5	94	83.14
Turner	168	1	167	134	131	3	33	80.23
O'Hern	143	1	142	121	121	0	21	85.21
Canisius	140	10	130	110	108	2	40	84.61
Grand Totals	1,226	42	1,184	953	909	34	251	80.48

Initial operations for IBM processing of data were designed with a total number of family units of 953, representing the number of questionnaires actually returned, whether completed or not. In the analysis of items for variation, however, the number of blank questionnaires together with the excessive number of items not responded to or which were not applicable gave spuriously high chi square values (measures of significant association). Therefore the tables were corrected and the data were re-processed with blank and non-applicable responses deleted, to test the significance of the chi square values. Some of the tables, in fact most of them, appearing below will therefore have totals less than 953 -- the figure varying with the number of spurious items which were deleted.

The questionnaire and its variables. As mentioned, the original questionnaire was pre-tested in the areas connected with the experiment, and to facilitate a higher rate of returns a cover letter to parents was included, explaining the purposes of the study. The final instrument sent to each household, comprised 17 response items. Nine of these items were intended as criteria for determining whether the areas selected as rural, suburban and urban could be classified as such. Items of this class were distributed throughout the questionnaire; their corresponding numbers(as they appear on the questionnaire)appear below under category I. Other items, important for determining possible differences and similarities, were not taken to be as crucial. These appear in categories II and III below.

Category I

Item 3: Occupational style of life.
4: Occupational and/or social status. Descriptive job data and titles were converted to status rank by use of the Reese scale. This pertains only to male non-farm occupations.
6: Non-farm occupational status of working mothers or female guardians.
7: Income level of the family -- all contributors.
10: Educational level of male guardian.
11: Educational level of female guardian.
15: Spatial mobility of the family.
16: Type of home tenure.
17: Residential stability.

Category II

Item 1: Age of head of household.
2: Employment status of head of household.
8: Family size.
9: Child load of family.

Category III

Item 12: Regular use of language other than English in home.
13: Non-English language regularly used in the home.
14: Regular use of a foreign language by children in home.

With reference to the above three categories, then, we expect that if there are significant differences justifying our classification of areas, they will show up in all or in most of the items of category I. If, for example, the areas selected as rural are actually dormitory towns for urban Buffalo, then the expected differences by area on items of category I will not likely appear.

Coding. Standard coding procedures were used for all items except for those dealing with occupational and linguistic characteristics. We did not attempt a content analysis of occupations from the descriptions and titles of occupations given us by the respondents. (This may be done by any interested party, however, by going through the questionnaires which are on file in the office of the director of the project.) Instead, the occupational data were used as a basis for giving each head of house and each working mother a social status ranking. The exact procedure used here was the application of the Reese scale: each occupational title and description was equated with a corresponding description and title in the list prepared by Reese (based on U. S. Census descriptions), which gives the status rank-order number for each type of occupation. It is this number which was coded as a response to items 4 and 6 of the questionnaire. The Reese scale was developed on the basis of a nationwide survey to determine how people rank each job description by social status. There are a number of obvious limitations involved in its use in a restricted geographic locale, but it was felt that consistency in the conversion process would be sufficient at least to allow us to measure differences deriving from occupations within each area. Use of the scale (without reference to social status) was a device for measuring such occupational differences.

The coding scale varied from 0 through 9, or ten ranked items, with 0 being assigned to each reported occupation which, according to the Reese material, ranked lowest in social status in national opinion.

In tables dealing with item 4, two extra response categories had to be included which were not part of this ranking process. One was for unemployed heads of household living alone with their children. The other was for unemployed male heads of household. In none of these cases did the respondents give a job description. Actually, they should have been tabulated as "non-applicable" for they will be treated as such in the analysis to follow. The number falling into these two categories is negligible.

Language responses could not be pre-coded without creating an inconveniently large number of ranks and columns. Using a classification system furnished by members of the research staff, the responses to item 13 were classified according to language groups and families. Three families appeared among the responses: Indo-European, Uralic, and Semitic. The groups appearing under Indo-European were: Germanic, Slavic, and Romance. The groups appearing under Uralic and Semitic were; respectively, Ugric and Arabic. Only one specimen of each of these groups appeared -- Hungarian and Arabic. The following table gives the code number assigned to each language after the questionnaires were completed and returned.

Table C. Code Numbers Assigned to Languages Reported.

Code	Specimen	Group	Family
00	English	Germanic	Indo-European
01	German		
02	Dutch		
03	Ukranian	Slavic	
04	Polish		
05	Slovak		
06	Spanish	Romance	
07	Italian		
08	French		
09	Hungarian	Ugric	Uralic
10	Arabic	Arabic	Semitic

Tabular Design. However varied the tables included here may appear, each is derived from one or the other of two basic designs: one for measuring differences on a given variable by place, and the other for measuring differences by type of group (control or experimental). The first type is a simple array of varied responses to a given item by areal classification.

For example:

Type 1.

Table X. Employment Status of Head of House by Area.

	AREAS			
Employed?	Rural	Suburban	Urban	Totals
Yes	225	324	333	882
No	9	9	26	44
N.R.	18	2	6	26
Totals	252	335	365	952

Type 2.

Table Y. Employment Status of Head of House by Type of Group, Without Reference to Area.

Is head of house Employed?	TYPE OF GROUP		Totals
	Experimental	Control	
Yes	470	412	882
No	25	19	44
N.R.	15	11	26
Totals	510	442	952

Tables of type 1 can be used for each group separately or it can be used without reference to group, both groups combined. Tables of type 2 can be used for each area separately or it can be used -- as in the present case -- without reference to area, all three areas combined.

In Table X, one would determine whether employment (or unemployment) frequencies showed significant variation by area. But if we used this type of table first for the control and then for the experimental group, we would be checking to see whether or not one group, as opposed to the other, accounted for most of the overall variation on the item in question. If this should be the case (that the control group accounted for all the variation) then we could say that with respect to this item the control and experimental groups are not matched.

In Table Y, one would determine whether employment frequencies showed significant differences by type of group. But if we used this type of table first for the rural, second for the suburban, and last for the urban sample on a given item, we would be checking to see whether overall variation by type of group, without reference to area, would be a function of a particularly large variation between groups within one of the three areas. Also, if no variation between groups is found in any area, and for any item, we can conclude that the groups are well matched with reference to our variables.

Discussion of expectations with regard to findings. As can be seen, expectations with regard to findings will vary with reference to type of table presented above. Four categories of expectations arise from the use of tables X and Y:

1. Concerning variations of responses to a given item by area: With respect to responses to items of category I, significant differences should appear in our tables, and appear in such a manner as to indicate that the areas taken as rural, urban, and suburban are classifiable as such. If no such differences appear, then the variable under consideration is not a function of place or area and no association could be said to exist between area and the variable tested.

2. Concerning variations of responses to a given item or variable by group (without reference to place -- all areas combined): Here no significant differences between groups is expected on any of the 17 items. If such differences do appear, the experiment will be seen to involve uncontrolled variables; the indication would be that the experimental variables are not causing the results obtained.

3. Concerning variations of responses to a given item by area for each group: Here it is expected that if one group shows significant variation by area, the other will follow suit. This will indicate that neither group by itself is causing the overall variation by place; hence that there is no significant difference between groups. This should be true on any given item.

4. Concerning variations of responses to a given item by group within each area: It is expected here that within each areal category no significant differences will occur between experimental and control groups. If such differences should occur, then the results of the linguistics experiment could not be considered to be wholly reliant upon the experimental variables. Problems of interpretation would arise.

If all expectations are borne out by findings, then the following claims can be made on strong empirical grounds:

1. That the results of the linguistics experiment are independent of variations between areas and can be expected to hold independently of them in any future situation with respect to the same variables and circumstances.

2. That the results of the linguistics experiment are not "contaminated" by differences between experimental and control groups with respect to the variables or items used in this study.

Tasks

Organization of Findings. Since the items of category I are regarded here as crucial, they will be examined first for response variation by area from which the responses issued. This entails first an examination of responses to each item, without reference to group type to determine whether to accept or reject null hypotheses as well as to determine, where data permit, the nature, direction and degree of association or variation. Second, responses to each item are to be examined to determine whether the general pattern established in the above task holds true for each group separately considered. Here, the following questions will be answered: Does the experimental group show variation by area in each of its responses to the items of category 1? What is the nature, degree, and direction of these variations or associations? Do the same things hold true for the control group? For, if the two groups are well matched there will be no significant difference between them in terms of the existence, the degree, the direction, and the nature of their variations by area of residence. If greatly mis-matched, the two groups will show in their responses marked differences of pattern by area and one of them will account for much more of the overall variation, found in task one, than will the other.

Third, responses to each item in category I will be examined to determine significant differences between groups in the responses to each item. Here the tests will be made without reference to area. That is, the following question will be answered: For all areas combined, do the responses to each item in category I vary significantly by type of group? Or, does the control group differ significantly from the experimental group on each item? Fourth, responses to each item of category I will be examined to determine whether significant differences appear between each type of group within each area, separately considered. If, for example, overall difference between groups is found in task two, we will want to know just where or in what area or areas that difference takes place.

The same tasks will apply to each set of responses to each item in categories II and III, in the same order of analysis as just enumerated. Further, for all three categories, it will be noted which items, and how many items, fail to give responses that would meet expectations.

In presenting this material, all tables will be omitted which do not yield significant variation. Here the results of tabular analysis will simply be presented. Each table omitted will be properly noted, so that interested persons will be able to consult them in the files of the project director.

Classes of null hypotheses to be tested. Instead of presenting a null hypotheses for each table below, they are, for convenience and avoidance of repetition, listed here. It should be understood, when looking at a particular table of data, below, that one of four classes of hypotheses will be appropriate to it. These are as follows (the order of tabular presentation will follow the order of null hypotheses as listed):

1. There will appear no significant variations of responses according to area of respondents' residence for any item of category I; Apparent variations by area will be fully expected on the basis of chance. If expectations are met, the data should compel us to reject this hypothesis for any item in category I. This would indicate that the results of the English linguistics experiment hold independently of maximum variations or differences between the areas wherein the experiment was conducted.

2. There will appear no significant variation by area for either group separately considered, and all apparent variations for either group will prove to be explained on the basis of chance; this will hold true for each set of responses to each item of category I. Here it is expected that great variation by area for each group will actually appear in the data. If this is the case then we must reject the null hypothesis.

3. For each item in category I (all areas combined) there will be no significant variation of responses by type of group. Acceptance of this null hypothesis would be congruent with an expectation that the two groups are well-matched and that the results of the English linguistics experiment would not be influenced by differences between groups but by experimental variables only.

4. For each item of category I, there will be no significant variation by type of group within each area. Acceptance of this hypothesis would further confirm that the experimental and control groups were initially well-matched. Further, if some significant differences between groups are found in (3.), they can be localized and specified here.

This same order of hypotheses will be followed in dealing with responses to items of categories II and III.

THE FINDINGS

Part I

Category I.

Item 3 responses (Occupational style of life vs. Area). Table 1 gives a distribution of responses to item 3 according to the areas from which the responses issued. If the school populations selected as rural are actually rural, as opposed to those selected as suburban and urban, then we would expect a significantly higher concentration of farm occupations in the places subsumed as rural as well as a significantly higher concentration of non-farm occupations in places subsumed as suburban and urban.

Table 1. A Percentage Distribution of 914 Responses* to Item 3 by Occupational Style of Life and by Area.

Life Style	Type of Area			
	Rural	Suburban	Urban	Totals
Farm**	4.16	0.33	0.66	5.15
Non-farm	21.01	35.20	37.20	93.98
Both	0.43	0.22	0.22	0.87
Totals	25.60	36.32	38.08	100.00

The farm population is but 5.15 per cent of total; in terms of its distribution in the above table, there is a 320% difference between its urban/suburban and its rural concentration (the 4.16% of total falling in the rural area). There is a 245% difference between rural and urban/suburban non-farm occupations,the bulk of which falls in the urban/suburban areas. For those who work at both styles of life, just under half are to be found in the area designated as rural. Also, within the rural area itself, 16% of the population hold to a farm style of life, as opposed to 1% of farmers in the urban/suburban population. There appears to be no significant differences between urban and suburban areas with respect to farm style of life. There is some question whether this holds for non-farm life style (this will be answered later under item 4.).

---

[*] The number of questionnaires circulated was 952. N.R.'s and N.A.'s were too numerous to lead to anything but spuriously high chi square values and were omitted here. This will be the case for all tables to follow where the number of cases dealt with is less than 952.

[**] Those who own farms and the negligible number merely working on farms were collapsed into this "Farm" category.

Statistical significance of these facts. For sake of clarification of what follows, an explanation of procedures to be used throughout the remainder of this presentation will be given in connection with analysis to establish significance of the association between style of life and areas. That is, all the steps in proving existence of association or variation of the variable by area will be included here. One may refer back to this process for clarification of any remaining operations.

The table to be presented is a contingency table. From its marginal totals one can compute the exact numbers that would appear in each of the table's cells if there were no variation at all between occupational style of life and the areas classified. These estimated numbers are called theoretical frequencies, and the difference between actual (observed) frequencies and the theoretical ones becomes the basis for estimating whether or not observed differences "this large" (or this small) are due to chance. If not due to chance -- and this is determined by chi square test, (x^2) -- then it can only be inferred that the differences are significant and that they must be related to circumstances peculiar to the area in which the responses were given.

Now, if the differences between actual and theoretical frequencies in each cell are negligible or insignificant, we must accept the null hypothesis that style of life is not a function of places selected as rural, suburban and urban. This would run counter our expectations. If significant, these differences would verify our expectations, and in that case we would reject the null hypothesis and claim that maximal differences between areas exist and that style of life varies with type of area selected.

Table 2. A Distribution of 914 Responses to Item 3 by Occupational Style of Life and by Area.

LIFE STYLE	AREAS			TOTALS
	Rural	Suburban	Urban	
Farm	12.03*/ + 38	17.07*/ - 3	17.90 / - 6	47
Non-farm	219.92 / - 192	312.02 / + 327	327.06 / + 340	859
Both	2.05 / + 4	2.91 / - 2	3.04 / - 2	8
Totals	234	332	348	914

x^2 (4 df) = 82.80 p$\leq$ more than .001** Original table gave x^2 = 96.75.**

*Numbers in the small squares are "independence" or theoretical values,-- that is, the values which would appear if life style were independent of type of area. The numbers in the larger cells are the actual or observed frequencies from the responses to Item 3 of the questionnaire. The pluses and minuses above observed frequencies indicate only that the observed frequency is more than (+) or less than (-) the independence value. All independence values are derived by: column total times row total ÷ N or 914. Eg. $\frac{(234)\ (47)}{914}$ = 12.03. Arithmetical operations upon the differences between independence and observed frequencies give a chi square value of 82.80 which is significant at the .0001 level. This means that we could expect differences this large purely on the basis of chance only once in 1000 trials. Thus, style of life is not independent of type of area. The two types of variables are significantly associated.

**This table and others were revised from the initial IBM table by the author in an effort to avoid spuriously high chi square values. The initial IBM table was also revised by re-programming and reprocessing punch card data. The second IBM table dealing with this item came up with a chi square value very close to the one above or, x^2 (6df) =83.10 p $<$ .0001. Thus, approximately the same conclusions are to be drawn. (df) refers to the number of degrees of freedom in the contingency table, a function of table size. The significance of chi square values vary with table size or with number of degrees of freedom -- the higher the df, the greater the x^2 value must be to be significant. df is derived by subtracting 1 from the number of row cells, 1 from the number of column cells and then multiplying the remainders.

Conclusion: Reject null hypothesis. Differences between areas with respect to this item are significant. Style of life is associated with area of residence.

Direction of association. Farm and non-farm style of life vary inversely with respect to a rural to urban ordinal scale. Refer to signs (+ and -) on Table 2.

Degree of association. If measured by a C value, the degree or "strength" of association will depend for its interpretation upon what is the maximal degree for a table of this size. For according to Yule[3] maximal value is given by $C = \sqrt{\frac{t-1}{t}}$ where t is number of cells per column. Thus, maximal value of C here is $C = \sqrt{\frac{2}{3}}$ or, $C = .81612$. However, the value of C in the present case is $C = \sqrt{\frac{x^2}{x^2 + N}} = \sqrt{\frac{82.8}{82.8 + 914}}$ or, $C = .2881$. This value is moderate. It is really not a strong association and yet it is by no means a weak one. It would be stronger if we were to combine urban with suburban responses -- the point being that the moderate value of C is a reflection of two very similar things (suburban and urban areas) treated as separate entities with reference to style of life.

Item 4 Responses (Social Status of Occupation by Area):

Table 3. Contingency Table for 855 Responses to Item 4, Social Status by Area of Residence.

Soc. Status	AREA			Totals
	Rural	Suburban	Urban	
0	2.27/ + 3	4.49/ 5	4.79/ - 4	12
1	20.19/ + 32	33.31/ - 15	35.50/ + 42	89
2	23.60/ + 31	38.92/ - 20	41.48/ + 53	104
3	21.78/ - 17	35.93/ - 29	38.29/ + 50	96
4	16.79/ - 16	27.70/ - 23	29.51/ + 35	74
5	33.35/ + 36	55.02/ - 47	58.63/ + 64	147
6	28.14/ - 18	46.41/ + 77	49.45/ - 29	124
7	22.69/ 23	37.43/ + 49	39.88/ - 28	100
8	16.11/ - 11	26.57/ + 43	28.32/ - 17	71
9	6.58/ - 4	10.85/ + 12	11.57/ + 13	29
A/B*	2.05/ + 3	3.36/ 0	3.59/ + 6	9
TOTALS	194	320	341	855

x^2 (24 df) $=$ 108.69 $p > .001$

*unemployed widows and male heads of household respectively.

Conclusion: Reject null hypothesis. Social Status of non-farm occupation is associated with area. Differences between areas with respect to this variable differ significantly. Differences of this magnitude are expected by chance variation once in over 1000 trials. Thus, not only farm style of life varies with area, but so also do non-farm occupations and occupational status.

The following table very roughly and generally reconstructs occupational differentials from scale numbers appearing in the left column of Table 4, above.

Table 5. Percentage Distribution of 855 Responses by General Occupational Category and by Area.

Occupational Category	AREA						Totals	
	Rural #	%	Suburban #	%	Urban #	%	#	%
Laborers Service Hs. Servants Operatives (0-4) LOW	99 26.4 →	11.6 +	92 24.5 →	10.8 -	184 49.1 →	21.5 +	375 100.0	43.9
Craftsmen and Foremen Salesworkers Clerical (5-7) MIDDLE	77 20.8	- 9.0	173 46.6	+ 20.2	121 32.6	+ 14.2	371 100.0	43.4
Mgrs., Ofc'ls & Prop. Prof'l, tech'l (8-9) UPPER	15 15.0 →	- 1.8	55 55.0 →	+ 6.4	30 30.0 →	+ 3.5	100 100.0	11.7
A & B	3	0.4	0	0.0	6	0.7	9	1.1
Totals	(194)		(320)		(341)		(855)	100%

Observations regarding nature and direction of association:

1. Nearly half of the lower status occupations concentrate in urban areas.
2. Middle status occupations concentrate in suburbs.
3. Upper status occupations concentrate in suburbs.
4. Over half of the rural population holds lower status occupations.
5. Over half of the suburban population holds middle status occupations.
6. Over half of the urban population holds lower status occupations.

7. Rural and urban populations are fairly similar in pattern.

8. Some types of association are related to conditions peculiar to the suburbs.

9. The lowest concentration of lower status occupations is found in the suburbs.

10. The lowest concentration of middle status occupations occurs in rural area.

11. The lowest concentration of upper status occupations is found in rural area.

There does not appear to be any uniform pattern in the above distributions except that in our data occupational status does not tend to be so much a matter of a rural/urban distinction as it is a rural-suburban or an urban-suburban distinction. That is, the gradient of status is not a straight-line progression from rural (low) to urban (middle) to suburban (high). Rather, it appears to be rural or urban (low) to suburban (high). The trend may be shown more clearly through collapsing categories, as in the next table.

Table 6. Percentage Distribution of 855 Responses for Each Area According to High V. Low Occupational Status.

Occ'l. Status	AREAS					
	# Rural	%	# Suburban	%	# Urban	%
LOW	119	(61.3)	115	(35.9)	219	(64.2)
HIGH*	75	(38.7)	205	(64.1)	122	(35.8)
Totals	194	100.0	320	100.0	341	100.0

*A and B of Table 5 were distributed.

Here the uniqueness of the suburban population noted in the above observations appear more striking, and the similarity of rural and urban populations likewise stand out more clearly. In fact, if we should run a chi square test of status by rural and urban areas only (leaving the suburban data out of consideration) there would appear to be no significant variation of occupational status by area. Thus, the significance found on Table 4 would appear to be explained by the suburban population.

If this is true, then the maximal differences are to be found between the rural-urban students' backgrounds and the suburban. If, then, students of non-farm background show performance differences in the linguistic experiment, an additional check should be made of the possibility that it is the suburban students, rather than the rural or urban, who manifest this performance differential.

Table 7. Distribution of 535 Responses to Item 4 -- Suburban Population Eliminated Experimentally.

Occ'l. Status	AREAS		
	Rural	Urban	Totals
Low	122.56/ 119	215.43/ 219	338
High	71.44/ 75	125.57/ 122	197
Totals	194	341	535

x^2 (2df) = 0.42 p $<$ .80

1. 115.54
2. 78.73
3. 222.62
4. 118.53

535.42
-535.00
0.42

The probability that differences 'this large' would be found on the basis of chance is 80 out of 100 trials. This means that there is no significant variation of occupational status by area when the suburban population is excluded. When the suburban population is included, a very significant chi square value appears. Thus, the suburban characteristics of background account for most of the positive association between occupational or social status and area.

Degree of association. Maximal degree of association, using the C-value, is .9534. The C value for our data are:

$$C = \sqrt{\frac{x^2}{x^2 + N}} = \sqrt{.1093}; \; C = .3306,$$ a moderately high degree of association.

Item 6 (non-farm occupational status of working mothers).

IBM Table Number 4 with 10 df, comparing occupational status of working mothers by area yielded a chi square value of 21.32, a value not significant at the .01 level.

Conclusion: Accept the null hypothesis. Occupational characteristics and/or social status for working mothers do not significantly differ by type of area.

Item 7 (Family income level by type of area).

Table 8. Distribution of Incomes of 952 Families by Areas of Residence.

Income Intervals	AREAS			Totals
	Rural	Suburban	Urban	
less than $1000	4	1	2	7
1000 - 2999	5	1	12	18
3000 - 4999	26	8	38	72
5000 - 6999	54	42	128	224
7000 - 8999	55	63	72	190
9000 - 10999	35	76	38	149
11000 - 12999	13	28	21	62
13000 - 14999	7	16	10	33
15000 - 16999	6	21	7	34
17000 - 18999	2	11	3	16
19000 - 20999	4	10	1	15
21000 and over	4	36	14	54
N.R.	36	22	18	76
N.A.	1	0	1	2
Totals	252	335	365	952

x^2 (26df) $= 162.24 \quad p > .001$

Chi Square value above is spuriously high. However, elimination of N.R. and N.A. rows does not change the significance of the differences of income by area.

Table 9. Revised Distribution of Above Table, With Income Intervals Collapsed to Three Classes.
(N.R.'s and N.A.'s Eliminated)

Income Intervals	AREAS			Totals
	Rural	Suburban	Urban	
LOW $0-6999	78.96/ + 89	114.96/ - 52	127.08/ + 180	321
MIDDLE $7000 - 14999	106.76/ + 110	155.43/ + 183	171.81/ - 141	434
HIGH $15000 plus	29.28/ - 16	42.61/ + 78	47.11/ - 25	119
Totals	215	313	346	874

x^2 (4 df) = 114.10 $p > .001$

Conclusion. Reject null hypothesis. Income level is associated significantly with type of area;-that is, there are significant differences between areas with respect to income levels.

Degree of Association. The association is again moderately high with a C value of .3399 and a T value of $\sqrt{\frac{114.10}{874.00}}$ or .36125. With the T value, the upper or maximum degree of association is always 1.0. Again, the association is not an exceedingly high association, but it is by no means a low one.

Nature and Direction of Association. A higher number of low income families than would be expected, under the assumption of independence of type and area, are found to be concentrated in the urban and rural areas. Lowest concentration (lower than expected under the theory of independence) appears in the suburban area.

The highest concentration of middle income families appears in the suburban area, with the lowest concentration in the urban area. The highest concentration of upper income families also is found in the suburban area. It is of interest that this follows the same general pattern as is seen in the tables dealing with occupational status (Table 5). Apparently the conversion of raw occupational data to the status rating scale, using the Reese procedure, has yielded a pattern of status that follows income differentials by area. A percentage distribution of income categories by area should, thus, produce a table similar to Table 6.

Table 10. Percentage Distribution of 874 Families by Reported Family Income and by Area of Residence.

Family Income	AREAS			Totals
	Rural	Suburban	Urban	
Low	10.2	5.9	20.6	36.7
Middle	12.6	20.9	16.1	49.6
High	1.8	8.9	2.9	13.6
Totals	24.6	35.8	39.6	100

Except for minor differences, this table and Table 6 are strikingly similar, and this means that the significance of variation of family income by area resides in the peculiar features of the suburban area -- just as was the case for occupational status. This being true, approximately the same percentage distribution should occur here as was true of Table 6 -- showing that rural and urban patterns were significantly similar. This would mean that if the suburban responses are excluded there would appear no marked variation between family income and type of area.

Table 11. Family Income by Area, Suburban Excluded.

Family Income	AREAS			Totals
	Rural	Suburban	Urban	
Low	103.09/ 89	------	165.91/ 180	269
Middle	96.19/ 110	------	154.81/ 141	251
High	15.72/ 16	------	25.28/ 25	41
Totals	215		346	561

x^2 (2 df) = 7.33 $p > .05$, insignificant.

Terms of Chi Square
1. 76.83
2. 125.79
3. 16.28
4. 196.29
5. 128.42
6. 24.72

568.33
- 561.00

7.33

With suburban population excluded, there is no significant difference between rural and urban areas with respect to level of family income. It is clear that peculiarities of the suburban situation account for the above shown variation of income by area. The same cautions regarding the interpretation of results of the linguistic experiment apply here as did for the table on occupational status.

Item 10. Educational Achievement by Area of Residence, Male Parent or Guardian.

The trend, established above, of similarity between rural and urban areas and the dissimilarity of the suburban area with respect to occupational status and level of income, also holds true for level of educational achievement. Notice the following percentage distribution in which higher levels of education are much more frequent in the suburban sample than in either the rural or the urban. Note also the close similarity of distribution between rural and urban.

Table 12. Percentage Distribution of 901 Responses According to Educational Level and Area of Residence. Male Guardians Responding.

Education Level	AREAS		
	Rural	Suburban	Urban
Years or Grades:			
0 thru 4	1.0	0.0	1.0
5 thru 8	19.0	6.0	18.0
9 thru 12	49.0 *	37.0	50.0
13 thru 16	23.0	39.0	22.0
17, over	8.0	18.0	9.0
Totals	100.0	100.0	100.0

*Broken lines signify nearest approximate averages.

It is obvious, above, that an elimination of the suburban population from the above table would mean that with respect to educational achievement there would be no significant difference between areas selected as rural and areas selected as urban, but with the suburban population included the chi square value jumps from nearly zero to 71.07 on the revised IBM table 10, and to 75.09 on the previous revision of the original table made by the author. Both these values are equally significant. At 8 df, these values are significant beyond the .001 level.

Conclusion. Reject null hypothesis. The variable is a function of area of residence. That is, the segment of the population which achieves higher educational levels tends to reside in suburban locales, -- rather than in rural or urban locales.

It is even more apparent now that any performance difference between participants as to experimental results, if there should be a difference, could be expected to be a function of suburban socio-economic conditions. That is, if socio-economic factors of the sort under discussion here are an element in performance differences, one should fully expect them to occur between the suburban children as opposed to all others, rural or urban. One would not expect such differences between rural and urban children unless variables not dealt with here enter into the picture.

Since the percentage distribution on the above table shows the same pattern as previous tables dealing with income and status, it follows that the degree of association would follow the same trend and would only be moderately high. If the urban area were as different from the suburban area as the latter is different from the rural and urban area combined, the degree of association would be maximal. Since this is definitely not the case, however, only a moderately high degree of association between area and educational achievement is expected.

Item 11. Educational Achievement by Area of Residence, Female Guardians Responding.

Table 13. Percentage Distribution Responses of 915 Female Guardians Concerning Their Educational Achievement. Data Arranged By Area of Residence.

Education Level	AREAS		
	Rural	Suburban	Urban
Years or Grades:			
0 thru 4	0.0	0.0	0.0
5 thru 8	11.0	2.0	16.0
9 thru 12	61.0 *	55.0	64.0
13 thru 16	22.0	38.0	18.0
17, over	6.0	5.0	2.0
Totals	100.0	100.0	100.0

---

* Broken lines signify nearest approximate averages.

Generally, female responses present the same pattern as was seen for male responses. There are some differences, but of a kind which are rather minute in terms of the general purposes of the linguistics experiment. Obviously, the tendency to lower levels of educational achievement for women in the suburban area is lower than for suburban males (2.0% as opposed to 6.0%); this is but a more pronounced instance of the same trend exhibited by suburban male responses on Table 12. Further, there is a markedly higher concentration of women in the level 9 through 12 years of achievement in the suburban population; here, too, this fact appears to be but a reflection of overall trend for the suburban populations to be markedly different from the rural and urban populations on this and foregoing variables. The greatest difference in education between the sexes in the suburban area is in the category 17 years and over (5.0% of the female as opposed to 18.0% of the male sample).

This is apparently a difference relating to sex rather than to socio-economic area, for in all areas there is a greater tendency for women to discontinue their education in the high school years and a correspondingly greater tendency for males to continue their education into the higher levels. These facts are clearly indicated in the above data as facts of sex roles rather than facts of the peculiarities of residence.

Degree of association. The IBM revised Table 1 for question 11, operating with 8 degrees of freedom, gives a chi square of 76.68 which is significant beyond the .001 level. The author's earlier revision of the original table gave a nearly identical value of 76.59 (computed through the intermediate P value of 1.0837). The usual formula for chi square gave a value of 77.96. All these values have the same significance.

Conclusion. Reject null hypothesis with respect to educational achievement among female guardians. The same conclusions hold generally here as for men. However, there is a slightly greater apparent tendency to differentiation between rural and urban women with regard to achievement in education. Urban (Catholic) women appear to have a sharper tendency than rural women to stop their education at earlier levels or years. These differences are so small as to be of questionable statistical significance, however. To check it, a chi square test was run, considering rural and urban women only.

Table 14. Analysis to Determine Rural-Urban Differences Among Female Guardians with Respect to Educational Achievement. 585 Cases for Distribution.

Educational Level; Years or Grades:	AREAS			Totals
	Rural	Suburban	Urban	
0 thru 4	1.15/ 1	--------	1.85/ 2	3
5 thru 8	31.15/ 24	--------	49.85/ 57	81
9 thru 12	141.15/ 136	--------	225.85/ 231	367
13 thru 16	43.85/ 50	--------	70.15/ 64	114
17 and over	7.70/ 14	--------	12.30/ 6	20
Totals	225		360	585

x^2 (8df) = 12.80 $p < .10$

Chi Square Terms:

1.	0.87	2.16
2.	18.49	65.18
3.	131.04	236.28
4.	57.01	58.39
5.	25.45	2.93
	232.86 plus	364,94

$= 597.80$
-585.00
$[\chi^2 = 12.80]$

Conclusion: There is no significant difference between these two populations with respect to educational levels achieved. Thus, as with the male guardians' responses to this item, the suburban population accounts for the overall deviation of groups by area.

Thus, the minor differences relating to sex in these two distributions (Table 12 and Table 13) do not prove large enough to be statistically significant and could be due to chance.

Item 16. Type of Home Tenure by Type of Area.

Table 15. Distribution of 924 Family Units by Type of Land or Home Tenure According to Area.

Type of Tenure	AREAS			Totals
	Rural	Suburban	Urban	
Owned	194.84/ (+) 209	280.50/ (+) 304	300.66/ (-) 263	776
Rented	33.90/ (-) 19	48.80/ (-) 25	52.30/ (+) 91	135
Leased	1.00/ (+) 2	1.45/ (+) 2	1.55/ (-) 0	4
Freehold*	2.26/ (-) 2	3.25/ (-) 3	3.49/ (+) 4	9
Totals	232	334	358	924

χ^2 (6df) = 57.37 $p > .001$

---

*In some instances in which respondents did not check one of three types of home tenure (owned, rented, leased), they nonetheless wrote in that they were living rent free and did not own their homes. These respondents invariably turned out to be ministers. So, a fourth category was created for their type of home tenure, called "freehold".

Conclusion. Reject null hypothesis. Type of tenure is associated with type of area. On this item, however, and unlike the pattern with respect to status, income, and education, this association is primarily a function of the difference manifest in the urban rather than in the suburban area. Here, rural and suburban patterns are very similar. If these were the only populations involved, then there would be no significant association here at all.

Direction of Association. As can be seen in the + and - signs of the above table, in both rural and suburban areas, 90 per cent or more of each of these populations are home owners, as opposed to 73 per cent of the urban population. The chief difference between the urban and other areas is that it is characterized by much more renting activity or home tenure. Yet, since we do not have a representative sample of the city of Buffalo, we cannot say with assurance that this tendency is urban. It may be that the direction is Catholic, but perhaps not exclusively so. One could say with greater assurance, however, that the direction is negative with respect to movement to either rural or suburban areas. Also, the direction in terms of ownership is positive with respect to movement either to rural or suburban areas. In this respect alone are the categories inversely related with respect to area.

Item 17. Residential Stability of Family Units According to Area.

Table 16. Distribution of Responses of 923 Family Units to Item 17 According to Area of Residence. Residential Stability Compared.

No. of Years in Present Dwelling	AREAS			Totals
	Rural	Suburban	Urban	
1 thru 10[*]	122.10/ - 106	177.31/ + 204	190.59/ - 180	490
11 thru 20	92.20/ + 94	133.89/ - 118	143.91/ + 158	370
21 thru 30	12.71/ + 24	18.46/ - 10	19.83 - 17	51
31 thru 40	2.49/ + 4	3.62/ - 2	3.89/ + 4	10
41 and over	0.50/ + 2	0.72/ - 0	0.78/ - 0	2
Totals	230	334	359	923

x^2 (8df) = 31.99 $p > .001$

---

[*] No 0-point. Any part of a year is a year. See questionnaire.

Conclusions. Reject the null hypothesis. Residential stability is clearly a function of type of area. Significant differences with respect to this variable exist between the three areas. Of the least stable population segment -- who have lived in their present homes 10 years or less -- the smallest proportion by far is in the rural area (22%); the greatest concentration is in the suburbs, where 42 per cent have lived in their present homes ten years or less.

Table 17. Percentage Distribution of Responses to 923 Units to Item 17 According to Stability Ranking

Areas	STABILITY 10 yrs. or less LEAST STABLE	 10 - 20 MODERATE	 20 or More MOST STABLE
	%	%	%
Rural	22	25	48
Suburban	42	32	19
Urban	36	43	33
Totals	100	100	100

The moderately stable group shows the greatest concentration in the urban area. In the 'most stable' rubric, the highest percentage by far is found in the rural area.

Of the 'least stable' population, the smallest per cent resides in the rural area; of the 'moderately stable,' the lowest concentration is again in the rural area. For the 'most stable' population, the smallest percentage reside in the suburbs. Stability is clearly a function of rurality; that is, a positive direction to the association is apparent here -- the more rural the area, the greater the tendency to reside in one spot longer.

Table 18. Percentage Distribution of Same Data According to Type of Area.

Years	R	S	U
10 or less	46	61	50
11 thru 20	41	35	44
21 thru 30	10	3	5
31 thru 40	2	1	1
41 and over	1	0	0

Here the same tendencies are borne out. A much higher proportion of the suburban population falls into minimum stability category (10 years or less) than in any other area. Conversely, fewer suburban families reside in the same home for more than ten years. The suburbs are the least stable areas, residentially, while rural areas are the most stable. The urban areas are but moderately so.

SUMMARY OF FINDINGS THUS FAR

Analysis of the above data has attempted to determine whether there are significant differences between the three areas of residence of those responding to the questionnaire items of Category I. There are nine items in this category which were taken to be crucial in determining whether or not the areas as delimited were characterized by genuine rural, suburban and urban differences.

Of the nine null hypotheses (of the type 1 variety) seven were rejected. This means that the variables measured by frequency of responses to those 7 items do vary significantly from one area to another. This will be qualified later in a short discussion of nature and direction of associations or variations. One null hypothesis is still indeterminate in that it pertained to data which the IBM program would not tabulate. (This, however, was the variable of family mobility (spatial) as measured against type of area, but since residential stability was a complementary phenomenon, and since stability varied greatly with area, there is little doubt but that mobility would have shown a similar pattern of variation in direction and degree).

One remaining null hypothesis could not be rejected. This concerned the question whether working mothers' occupational status and occupational characteristics showed significant differences or variation by type of area. They did not.

Social status (as measured by Reese's scale applied to occupational titles and descriptions) together with levels of family income and levels of education achieved by both parents all varied significantly with type of area. In all the above cases, however, rural and urban characteristics were nearly identical, and the major contrast was between these two areas on the one hand, and the suburban area on the other. This means that there is a positive direction involved in our association. With regard to each and all of the variables tested above, higher levels show a positive correlation with suburban living. Put another way, suburban residence is likely to imply a higher degree of achievement of social status, family income, and education, than urban or rural residence.

For the linguistics experiment, the above observation implies that if performance differences do occur by area of residence, we could expect this differential performance to vary directly with this rural-urban vs. suburban difference -- if these factors are germane to the language skills with which the experiment deals. One might also inquire whether performance varies generally with farm vs. non-farm style of life, for significant differences in background of respondents were found along that dimension also.

While the pattern for status, income, and educational responses was the same with reference to type of area, the responses to items 16 and 17 of the questionnaire presented a rather different pattern. There was, of course, a significant difference in respondent's backgrounds with respect to area concerning type of home tenure and residential stability, but with reference to type of home tenure it was the rural and the suburban areas which were nearly identical, and it was the "urban" pattern which significantly varied from each of the remaining two areas.

With regard to residential stability, there were no two areas which were alike. Each manifested its own peculiar pattern, as can be seen in Tables 17 and 18.

In conclusion to this section of the report, the following can reasonably be claimed: that these areas do differ from each other significantly on eight out of nine variables. That in terms of status, income, education and style of life, the rural area is correctly classified, especially with regard to farm vs. non-farm style of life. There are striking similarities between areas selected as rural and urban on income, social status, and educational factors, however; by contrast, the suburban areas are set apart by unique patterns in regard to these variables.

SECTION II. DEALING WITH NULL HYPOTHESES OF CLASS 2 AS APPLIED TO RESPONSES TO ITEMS OF CATEGORY I.

Null Hypothesis:
There will appear no significant variations by area for either experimental or control group, separately considered, and all apparent variations by area for either group will prove to be a consequence of chance.

Item 3: Occupational Style of Life Vs. Area for Experimental Group.
See revised IBM Table No. 3, 3rd dimension -- 14th dimension.

X^2 (6df) = 38.58 which is significant beyond the .001 level. This fact duplicates the information for variation by area for all groups with respect to this item -- as found above on Table 2, p. 16. Degree and direction of association are the same for experimental group as for both groups considered as one.

Occupational Style of Life Vs. Area for Control Group.

(See revised IBM Table #3, 3rd dimension -- 24th dimension.)

X^2 (6df) = 43.45 and is significant beyond the .001 level. This fact also duplicates the information for both groups combined. Degree and direction of association are the same for control group as for both groups taken as one.

Conclusion: Reject null hypothesis in both the above cases. The total variation by area with respect to style of life is reflected (mirrored) in the variation for each group by area. Thus, total variation as found on Table 2, above, is not accounted for by any significant difference between these two sets of groups.

Table 19. Percentage Distributions for Each Group's Responses By Type of Area, as Compared to Overall Pattern.

Life Style	AREAS								
	R			S			U		
	Exp.	Con.	*	Exp.	Con.	*	Exp.	Con.	*
Farm	16	16	16	1	0	1	2	1	2
Non-farm	83	82	82	99	98	98	97	97	97
Both	1	2	2	0	2	1	1	2	1
Totals	100	100		100	100		100	100	

*This column is percentage distribution for Table 2, p. 16 -- both groups combined. Each group yields a pattern identical to the overall variation. In an overall sense, without reference to group differences within areas, the groups are well matched on this variable.

Item 4. Social Status of Male Non-farm Occupations vs. Areas For Experimental Groups and for Control Groups, Separately Considered.

With respect to this item, a significant variation or difference does in fact appear -- and contrary to our hopes. First, the chi square value for a table pitting experimental groups against area at 24 df is 110.25. This is significant beyond the .001 level. As hoped, we can reject the null hypothesis as applied to differences between areas for the experimental groups, for the experimental groups within rural, within suburban, and within urban areas do differ from each other very significantly -- just as was the case when we considered variation by area for both groups in combination.

Now, the same variation between control groups should appear here as it did for experimental groups--if there are not significant differences between experimental and control groups on this variable. But in fact the control groups do not show significant variation by area in their responses to this item. Because of this, we must accept the null hypothesis with reference to the control groups' differences between areas on the variable of status. The observed differences are not significant.

Since we are dealing with overall variation, it would seem logical to search within each particular area for the source of the obvious difference between experimental and control groups on this item.

A possible explanation for this difference between groups might be seen by breaking down the suburban area into its two component groups and by distributing their responses, in per cents, according to relative social status rankings -- as follows:

Table 20. Comparison of Experimental and Control Groups In The Suburban Area--Using IBM Tab. 24: 3rd dimen. v 14th and 24th.

Status Rankings	GROUPS IN SUBURBAN AREA		
	Experimental	Control	
	%	%	
Lower	16	33	N.B.
Middle	46	45	
Upper	38	22	N.B.
Totals	100	100	

One source of the overall difference between experimental and control groups on this item is the difference between them found in the suburban places where the experiment is being conducted. Backgrounds behind these two sets of student participants on this variable of status or occupation do differ as is clear in the above percentage distribution for each group. As can be seen in the following table, the differences seen on Table 20 are most significant.

Table 21. Analysis of Variation Between Groups Within the Suburban Area on The Variable of Status.

Groups	STATUS RANKS			Totals
	Lower	Middle	Upper	
Exper.	[44.6] -32	[95.1] o 96	[67.3] + 79	207
Control	[24.4] +37	[51.9] o 51	[36.7] - 25	113
Totals	69	147	104	320

x^2 (2df) = 15.86, p → .001

The difference is very significant. The experimental group concentrates in the upper status category; whereas, the control group concentrates in the lower status categories. Each group has about equal proportions in the middle status category. The two groups vary inversely with rank order of occupational status, in the suburban area.

This difference does not take place in the rural area where the distributions of status by type of group are nearly identical. Yet, there is some bland variation by type of group in the urban area on this variable. The following table incorporates Table 20 and compares it with experimental/control distributions in each of the other areas, rural and urban.

Table 22. Percentage Distributions Showing The Idiosyncracies of the Suburban Area With Respect to Status Concentrations of Experimental and Control Groups.

Status Ranks	AREAS R		AREAS S		AREAS U	
	EXP	CON	EXP	CON	EXP	CON
Lower	46	43	16	33	46	44
Middle	39	35	46	45	36	41
Upper	15	22	38	22	18	15
Totals	100	100	100	100	100	100

Table 23. Analysis of Variation Between Groups Within The Urban Area on the Variable of Occupational Status.

Groups	URBAN STATUS RANKS			Totals
	Lower	Middle	Upper	
Exper.	[80.3] 82	[68.2] 64	[30.5] 33	179
Control	[72.7] 71	[61.8] 66	[27.5] 25	162
Totals	153	130	58	341

x^2 (2 df) = 1.07 $p < .20$

Chi Square Terms:

1. 83.74
2. 69.34
3. 60.06
4. 70.49
5. 35.71
6. 22.73

342.07
-341.00
1.07

Conclusion: Experimental and control groups have no significant differences with reference to status ranks in the urban area.

Table 24. Analysis of Variation Between Groups Within the Rural Area On the Variable of Occupational Status.

Groups	URBAN STATUS AREAS			Totals
	Lower	Middle	Upper	
Exper.	[32.4] 34	[27.1] 29	[14.5] 11	74
Control	[52.6] 51	[43.9] 42	[23.5] 27	120
Totals	85	71	38	194
	x^2 (2df) $= 1.70$ $p < .20$			

1. 35.68
2. 49.45
3. 31.03
4. 40.18
5. 8.34
6. 31.02

195.70
-194.00
1.70

Conclusion: Experimental and control groups have no significant differences with reference to status ranks in the rural area.

Apparently, the suburban differences between groups account for the fact that when each group is taken separately, only one of them, the experimental, varies significantly with area with respect to the status variable. The above tables show why the control groups fail to follow the pattern of the experimental.

Item 6. Social Status of Non-farm Occupations for Working Mothers Vs. Areas of Residence, Experimental and Control Groups Separately Considered.

Neither the experimental nor the control group occupational status of working mothers showed significant variation from one area to the next. That is, working mothers of the participants in the experimental groups when grouped by their appropriate areas of residence did not show significant variation from one area to the next. The same was true for the working mothers of the control group. This means that overall variation on this item by area must be the effect of male guardian occupation differences between the areas, not female.

Item 7. Levels of Family Income Vs. Types of Areas for Experimental and for Control Groups Separately Considered. See IBM Tables 27: 3rd vs. 14th and 24th dimensions.

Experimental groups in rural areas differ significantly from experimental groups in both remaining areas, and the experimental group populations of the latter two areas differ significantly from each other. The chi square value expressing this differentiation is 122.38 (2df), and the probability that such differences could occur by chance alone one in over 1,000 trials.

The same observations made for the experimental also are true of the control groups. In both, level of income is a function of particular area within which these groups reside.

This does not mean, however, that there will be no significant differences between the two groups within each area. For both groups may vary significantly by area and still not be well matched within a given area. For example, the experimental group in the rural area could skew toward the higher income levels while the control group could concentrate elsewhere. The same could be true in the other two areas, and this could happen in such a way as to create overall variation by area, when all groups are in combination. As we see later, this turned out to be the case with reference to this income variable.

Item 10. Educational Level of Male Parents Vs. Types of Areas for Experimental and for Control Groups Separately Considered.

[See IBM Tables 30, 3rd dimension vs. 14th and 24th, respectively.]

Responses to this item by male parents of the experimental groups in each area differed significantly by type of area. x^2 (8df) = 50.42 and is significant beyond the .001 level. In fact, the pattern of variation by area for this group follows the same pattern as the one manifested by both groups considered together. Compare the following percentage distribution with that of Table 12, for example. The observations applying to Table 12 also apply here, and the percentages of each table are nearly identical. The nature, direction and degree of association on this variable which were stated in connection with the general picture also apply in the particular.

Table 25. Percentage Distribution of Responses of 480 Male Parents Concerning Their Educational Achievement: Experimental Group.

Educational Level, Years	AREAS		
	Rural	Suburban	Urban
0 thru 4	0	0	1
5 thru 8	15	4	17
9 thru 12	50*	35 *	51*
13 thru 16	24	41	23
17 and over	11	20	8
Totals	100	100	100

*Lines indicate positions of approximate averages.

Again, it is the suburban group which is creating this variation by area. Remove it, and no variation by area would be apparent. But, will this same pattern hold for the control group?

Table 26. Percentage Distribution of Responses of 421 Male Parents Concerning Their Educational Achievement: Control Groups

Educational Level, Years	AREAS		
	Rural	Suburban	Urban
0 thru 4	1	1	1
5 thru 8	21	9	20
9 thru 12	--48--*	--40--	--48--*
13 thru 16	22	35	21
17 and over	8	15	10
Totals	100	100	100

*Broken lines represent range of location of averages.

As for the experimental, so also for the control groups' responses to item 10. Again, the similarities between rural and urban response patterns are striking. Here as before, the suburbanites demonstrate higher achievement levels in education.

Are these differences significant? Chi square for this table is 17.55 at 8 df with a probability of nearly .02. In all strictness, since from the start nothing under the .01 level was regarded as significant, we have to say that this value is not significant inasmuch as it lies between the .05 and .02 levels. Yet, it cannot be denied that the above distribution is even closer to the overall distribution than is the distribution for the experimental group as seen on Table 25, above, and both experimental and control distributions are strikingly similar. One is forced to ask, if one distribution must be taken as measuring a significant difference why can't one very nearly like it be taken in the same way? In my own opinion, it would be absurd here to hold out for technical primness. It is quite evident that if we should pull the suburban population out of the above table, a chi square of nearly zero would show itself, and a zero is the absolute minimum of variation. It is also apparent that the suburban distribution when compared with the urban one would yield a highly significant X^2 value, and the same would be true of a comparison between suburban and rural distributions. Therefore, it is impossible to say that there is no variation by area here. We must reject the null hypothesis as before.

Item 11. Educational Level of Female Parents Vs. Type of Area for Experimental and for Control Groups Separately.

[See IBM Table 15: 3rd v. 14th and 24th Dimensions]

Educational achievement of female parents (experimental) differed significantly by type of area. x^2 (8df) = 63.23 with a probability beyond .001. The same findings applied to the female parents of participants in the control group. The following table indicates the proportional distributions by group and by place.

Table 27. Percentage Distributions of Responses of Each Group's Female Parents to Item 11, Years of School Completed.

Educational Level, Years	AREAS					
	Rural		Suburban		Urban	
	EXP.	CON.	EXP.	CON.	EXP.	CON.
0 thru 4	0	0	0	0	0	1
5 thru 8	10	11	2	1	15	17
9 thru 12	54*	65	54	58	68	59
13 thru 16	24	21	40	35	16	20
17 and over	12*	3	4	6	1	3
% Totals	100	100	100	100	100	100

*N.B. may be significant difference. If so, it will show up later in dealing with groups by specific place.

Conclusion: $R_e$ject null hypothesis. Each group varies significantly by type of area.

Item 15. IBM Tables on Spatial Mobility Were incorrect due to faulty programming.

Item 16. Type of Home Tenure Vs. Type of Area for Experimental and for Control Groups, Separately Considered.

Each group considered separately manifested significant differences by type of area with regard to patterns of home tenure. For the experimental groups in each of the areas, x^2 (6df) = 40.13 and is significant beyond .001. The chi square for the control is 23.13 and is also significant beyond the .001 level. While there are some variations between exp. and con. within given areas, they do not appear significant. This will be demonstrated later, however, Generally, the particular patterns of difference follow the variation by area as was found for all groups in combination.

Item 17. Residential Stability of Families Vs. Type of Area For the Experimental and for the Control Groups, Separately Considered.

For this item there was no significant difference between rural, suburban and urban experimental groups, -- just as there was none between rural, suburban and urban control groups. Yet, there was a significant overall variation of all students' families' incomes by area. This is one of those peculiar cases in which the combined effect of two different groups will yield a significant variation but in which neither group by itself will indicate the same thing. Yet, by observation of the percentage distributions of each one separately we can see in each group the same trends as we saw in the overall picture when all participants combined were pitted against area. If there were an association for each group separately considered and if significant, the same observations about its direction and nature would have to be made just by comparing percentage distributions of each group by area.

SECTION III. Analysis of items of Category I for Significant Variation of responses by Type of Group Without Reference to Area, and Analysis of the Same Items for Significant Variation By Type of Group Within Each Area.

We are forced to accept the null hypothesis on 5 out of 9 items of Category I., for without reference to particular area there proved to be no significant difference between control and experimental groups with reference to:

1. Occupational style of life. [Item 3]
2. Social status of occupation. [Item 4]
3. Non-farm occupational status of working mothers. [Item 6]
4. Educational level for mothers. [Item 11]
5. Type of home tenure. [Item 16]

Concerning each of the above, apparent differences between groups were so small as to be the consequence of chance variation.

We were also, however, forced to reject the null hypothesis on 3 of the 9 items of Category I, for, without reference to particular area, there did appear significant differences between experimental and control groups with regard to:

1. Level of family income. [Item 7]
2. Educational level of fathers. [Item 10]
3. Residential stability of families. [Item 17]

The two groups differed significantly with respect to these items.

[For data see IBM Tables 13, 14, 16, 17, 20, 8, 12, 13 (var. 19 vs. 16), 14 (var. 19 vs. 17).]

The remaining item, as already stated, was mis-programmed by the IBM people and the responses were therefore worthless.

******

Analysis of Items of Category I for Significant Variation Between Groups Within Each Area Separately.

1. On all items except one there was no difference between the two groups within any area that could be said to be a consequence of anything except chance. Thus for all items of Category I except Item 7 (Income level within each area by type of group), we are forced to accept the null hypothesis, but for Item 7, the chi square values for the rural area [13.65 (2 df)] and for the urban area [33.76 (11df)] were significant at the .001 level. However, experimental and control groups in the suburban areas showed no significant variation whatever with respect to income level of family.

2. Although variations between groups were indicated in earlier tables overall, it is the variation or the absence of it within each area separately considered which is of most value for the English-linguistics experiment. Thus, for all crucial items of category I, except family income, the groups appear to be well-matched.

PART II

Items of Category II. Do the four null hypotheses apply to the following items?

1. Age of head of household? [Item 1]
2. Employment status of head of household? [Item 2]
3. Family size? [Item 8]
4. Number of children per family (child load)? [Item 9]

Item 1. Age of Head of Household.

A. There was no significant difference between the three areas with reference to this variable. Accept null hypothesis, type 1.

B. There is no significant difference between experimental groups of each area with reference to age of head. Neither is there a significant difference here between control groups of each area. Accept null hypothesis, type 2.

C. There is no significant difference between groups with respect to responses to this item. Accept null hypothesis, type 3.

D. There is no between-group variation within any of the three areas with respect to responses to this item. Accept null hypothesis, type 4.

Item 2. Employment Status of Head of Household.

A. There was no significant difference between areas with reference to employment status of head of house. Accept null hypothesis of type one.

B. There was no significant variation for all experimental groups by area. Neither did such variation appear for all control groups. Accept null hypothesis of type 2 for each group.

C. There was no significant variation or difference between groups (areas not broken down) with respect to responses to this item. Accept type 3 null hypothesis.

D. There was no between-group variation within any of the three areas in terms of responses to this item. Accept null hypothesis, type 4.

Item 8. Family Size.

A. There was no significant difference between areas with respect to family size. Accept null hypothesis, type 1.

B. There was no significant variation for all experimental groups by area. Neither did such variation appear for all control groups. Accept null hypothesis, type 2.

C. There was no significant difference between groups with respect to their responses to this item. Accept null hypothesis, type 3.

D. Experimental and control groups within each area showed no significant differences. Accept null hypothesis, type 4.

Item 9. Number of Children per Family. (Child load)

A. No significant difference appeared between areas with respect to child load. Accept null hypothesis, type 1.

B. No significant variation between areas appeared for experimental groups and the same was true for control groups. Accept null hypothesis, type 2.

C. For all areas as a whole, there was no significant difference between groups with reference to their responses to this item. Accept null hypothesis, type 3.

D. There was no significant difference between groups within each area separately considered. Accept null hypothesis, type 4.

PART III

Items of Category III. Application of the four types of null hypotheses to the following items:

1. Regular use of language other than English in the home, [Item 12].
2. Non-English languages regularly used, [Item 13].
3. Regular use of a foreign language by children, [Item 14]

1. Regular use of a foreign language in the home as against the regular use of English was found to vary directly with area. The association between use of foreign language and rurality is negative. The regular use of language other than English is a function of living in the urban as opposed to rural and/or suburban areas. The differentiation between areas with respect to this variable was marked. Chi square at 2(df) = 41.47 and is significant beyond the .001 level. Fifteen per cent of the urban families as against 2 per cent of the rural families regularly use a foreign language in their homes. Between these two extremes lie the suburban groups with but 5 per cent speaking a foreign language regularly in their homes. On this basis we reject the null hypothesis of type 1.

Not only did the experimental groups show direct variation by area with respect to this variable, but the control groups did also. Both variations were significant beyond the .001 level. And both reflect the general pattern described just above. In consequence we must reject the null hypothesis of type 2.

As expected, there was no significant difference by type of group with reference to this variable for the region as a whole; so we must accept the null hypothesis of type 3.

Moreover, when each group was compared within each area separately, no significant differences were found. The two groups both in the overall sense as well as within each area are extremely well-matched in terms of this broad variable. The question remains, are they well-matched with reference to specific languages spoken regularly in the homes? With respect to the broad variable of regular use of foreign language, we must accept the null hypothesis of type 4.

2. Non-English languages used regularly in the home. A breakdown of the term, "foreign language" into the actual languages used regularly in the home includes German and Dutch, Ukranian, Polish and Slovak, Spanish, Italian and French as well as the negligible use of Hungarian and Arabic. For the sake of coherent statistical results we have grouped these languages into categories: Germanic (except English), Slavic, Romance, and other (Hungarian and Arabic).

Frequencies in these categories do exhibit some variation by type of area but it is only significant at less than the .05 level. This is hardly enough to be considered statistically significant. The effect of pulling out the numbers who spoke only English reduced our variation by area from significance to non-significance. Yet, in spite of this, it might be interesting to see a percentage distribution of the results of this question.

Table 27. Percentage Distribution Based on Responses of 72 Persons Who Spoke a Foreign Language Regularly in Their Homes.

	AREAS		
	R	S	U
Germanic	0	27	4
Slavic	100	40	70
Romance	0	27	19
Other	0	6	7
Totals	100	100	100

In spite of the fact that we have no statistical significance here, we do see a definite pattern, and there is enough of a factual difference in the above distribution to have an effect on the results of the Linguistics experiment, if language use will prove a variable in the performances of students in the experimental and control groups. There is a marked difference between rural and urban and between rural and suburban patterns of usage. And there is an interesting concentration of Germanic languages in the suburbs where Romance and Germanic languages make Slavic less conspicuous.

Within each separate area no significant differences between experimental and control groups could be found. We accept the null hypothesis of type 4, therefore.

3. Regular use of a foreign language by children.

A. No significant variation by area could be found for this variable. Accept null hypothesis, type 1.

B. The experimental groups showed no significant variation by area, and neither did the control groups. Accept null hypothesis of type 2.

C. There were no significant overall differences between experimental and control groups. Accept null hypothesis, type 3.

D. There were no significant differences within each or any area between experimental and control groups. Accept null hypothesis of type 4.

Buffalo English Linguistics Project

As explained in the accompanying letter, this questionnaire is a means of obtaining background information important to the experiment now being conducted with respect to the teaching of English in our schools. Please answer each of the items appearing below. Thank you kindly for your cooperation.

(Please do not write in spaces which appear at extreme right of each page)

1. In appropriate space below, PLEASE CHECK the range of years in which the age of the head of household falls

1. 15 to 24 years _____
2. 25 to 34 years _____
3. 35 to 44 years _____
4. 45 to 54 _____
5. 55 to 64 _____
6. 65 or more _____

2. Is the head of household currently employed?

1. Yes _____
2. No _____

3. Is head of household for the most part a,

1. Farm worker? _____
2. Farm owner, renter, or manager? _____
3. Non-farm worker? _____

(If Part 3 of above item was checked, then complete items 4, 5, and 6 below. If not checked, skip these items.)

4. In the spaces provided, please give the title of head or household's occupation and briefly describe what he(or she) does for a living.

TITLE OF OCCUPATION: ____________________

Description of occupation:

____
____
____
____
____

5. If the mother or female guardian is the head of household, then do not answer the following item. If the mother or female guardian is not head of household, then please respond to the following item.

Does the mother or female guardian of the child(ren) receive an out-of-home income for work done outside (or inside) the home?

1. Yes _____
2. No _____

6. If the above answer was Yes, then in the appropriate spaces below please give the Title of her occupation and a brief description of it.

TITLE OF OCCUPATION: ____________________

Brief description of occupation: ____________________

____
____
____
____

Col.	Code
▨	▨
1	
▨	▨
2	
▨	▨
3	
▨	▨
4	
▨	▨
5	
▨	▨
6	
▨	▨

7. The following question seeks to obtain data for the different areas in which the teaching project is being conducted. What is needed is the approximate range of income within which the family income falls. By family income is meant the combined earnings of all family members who contribute to the support of the family. Please check the income range within which the family's annual gross income falls.

1. Under $1,000 ______
2. $1,000 to $2,999 ______
3. $3,000 to $4,999 ______
4. $5,000 to $6,999 ______
5. $7,000 to $8,999 ______
6. $9,000 to $10,999 ______
7. $11,000 to $12,999 ______
8. $13,000 to $14,999 ______
9. $15,000 to $16,999 ______
10. $17,000 to $18,999 ______
11. $19,000 to $20,999 ______
12. $21,000 or above ______

8. What is the total number of family members living in your house? ______

9. What is the total number of children now living in your house? ______

10. How many years of schooling has the male parent or guardian had? (Please check appropriate range of years below)

1. 0 through 4 years or grades ______
2. 5 through 8 years or grades ______
3. 9 through 12 " " " ______
4. 13 through 16 " " " ______
5. more than 17 " " " ______

(Advance training whether college or other type may be counted above)

11. Number of years or grades of schooling of female parent or guardian? (Check appropriate space below)

1. 0 through 4 ______
2. 5 through 8 ______
3. 9 through 12 ______
4. 13 through 16 ______
5. More than 17 ______

12. Is a language other than English regularly used in your home?
1. Yes ______ 2. No ______

13. If above answer is Yes, what other language is used most? ______

14. Does the child or any of the children regularly use a language other than English in the home?
1. Yes ______ 2. No ______

5. How many times has your family moved in the last 10 years? ______

6. Is the head of household's present home, (1) owned? ______
(2) rented? ______
(3) leased? ______

7. Please indicate the number of years in which your family has lived in your present home? (Count any part of a year as a year)
Number of Years ______

LEASE DO NOT WRITE BELOW THIS LINE

Col.	Code
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
.18	
19	
77-80	

APPENDIX FIVE

This Appendix contains a specimen of the questionnaire, "Personality Types and Your English Class," which is discussed in Section 2.5.2. of the report.

PERSONALITY TYPES AND YOUR ENGLISH CLASS FORM 63 EX

PART I

__DIRECTIONS:__ Please Read Carefully:

1. What your task is: You are about to read 50 sentences, each of which describes a particular kind of person. After you have read each sentence, judge how well this person would like being a student in your English class, and mark your choice __on the answer card__.

2. How to use the answer cards:

   a. Notice that you have been given three answer cards. Card number one is marked by a hole in the upper right corner. Card number two is marked by a hole halfway down the right side. Card number three is marked by a hole in the lower right corner. __Please use them in that order__. __DO NOT BEND THE CARDS__.

   b. Find the numbers 1-27 across the bottom of your first answer cards. These go with the first 27 sentences in your booklet.

   c. Above each of these 27 numbers you will find numbers 0,1,2,3,4,5,6,7,8, 9 and little spaces around each number. These are the spaces you will use when marking your answer; however, for this paper you will be using only the numbers 0,1,2,3,4. This is what they mean:

      0 means "dislike very much"
      1 means "dislike"
      2 means "not especially like or dislike"
      3 means "like"
      4 means "like very much"

   d. You have a separate sheet with this code to aid you in marking the answer cards. Detach it from the back of the booklet.

Sample--Number 1

1. This person likes to discuss literature and poetry.
   How well would he like your English class?

   Find number 1 on your answer card and __actually blacken in__ the space at your choice. Be careful to blacken in the entire space. Use __only__ the electrographic pencil provided. Go over the number.

Be careful: Please keep the following things in mind as you make your judgments:
1. Do __not__ think about whether this person would make a good classmate or be a good student.
2. __Ignore__ whether or not you personally like or dislike the kind of person described.
3. Do __not__ let the kind of person you are influence your judgments.

THE BASIC QUESTION IS HOW WELL EACH PERSON DESCRIBED WOULD LIKE BEING A STUDENT IN YOUR ENGLISH CLASS.

Time: Try to be finished with Part I in about 20 minutes. [Work carefully and think about each item, but do not spend too much time on any one item.]

Now go ahead with the other sentences. Remember: ANSWER EVERY ITEM, BUT GIVE ONLY ONE ANSWER FOR EACH ITEM.

PART I

Now begin with item 2 on card 1 (Check to make sure you are using the card with a hole in the upper right corner.)

2. This person likes to know "why" things happen.
3. He likes to experiment with new ways of doing things.
4. He likes to try to solve riddles.
5. He thinks it is fun to read.
6. He enjoys solving problems.
7. Mysteries of every kind are exciting to him.
8. He asks questions about things that are interesting to him.
9. He likes to hear about new ideas.
10. This person wants to know "how" things happen.
11. He wants to really understand things.
12. He likes to have his mind at work.
13. He is curious.
14. He likes to think.
15. He likes to work on things by himself until he has an answer.
16. Puzzles are fun for him.
17. He thinks words are fun.
18. New information is always interesting to him.
19. He likes to use his imagination.
20. He wants to find out answers to questions.
21. Activities needing mental effort are what he likes.
22. He uses information to solve problems.
23. He likes to write stories and poems.
24. He enjoys hearing about mysterious situations.
25. He likes to play word games.
26. Things he has not heard about before are exciting to him.
27. If something puzzles him, he likes to keep thinking about it until he solves the puzzle.

DO NOT STOP. Continue with item 1, on card 2.

PART II FORM 63 EX

DIRECTIONS: Please Read Carefully

On the following pages are presented a number of brief "thumbnail" sketches of various types of students. Your job is to read each description carefully and note the general type of person described, and then to judge how well such a person would like being a student in your English class. In other words, different kinds of students would like different kinds of classes. What you are asked to do is tell how well each of these "types" of students would like your class.

Sample - Number 1: This is a person with a great deal of stick-to-it-iveness. He likes to keep at a job until it is finished--to finish any job he starts, to work hard at a task, to keep at a problem until it is solved, to finish one job before starting another, to stay up late in order to get something finished, to keep on working even when he seems to be making little progress, to avoid being interrupted while working.

How well would this person like being a student in your English class?

Mark your choice on the answer card, using numbers 0,1,2,3,4 as you did for Part I. Use Card 3.

Now actually mark your choice for Sample-number 1 on card 3. Use only the electrographic pencil provided:

Be Careful: Please keep the following things in mind as you make your judgments.

1. Do not think about whether this "type" would make a good classmate or be a good student.

2. Ignore whether or not you personally like or dislike the kind of person described.

3. Do not let the type of person you are influence your judgments.

   The basic question is how well each type of student described would like being a student in your English class.

Remember: Answer every item, but give only one answer for each item.

Time: Try to be finished with Part II in about 15 minutes. When you have finished, turn your cards and booklet over.

Begin with item 2 on card 3 [Check to make sure you use the card with the hole punched in the lower right corner.]

Number 2. This person likes to do a good job at anything he tries. He likes to do his best, to accomplish things requiring skill and effort, to be recognized as the best student, to do a difficult job well, to solve difficult problems, to do things better than others, to be a successful student.

How well would this student like being a student in your English class?

Number 3. This person likes to show others that he respects and admires them. He likes to get suggestions from them, to follow instructions and do what is expected, to praise others, to accept the leadership of others, to avoid doing unusual things, to tell others they have done a good job and to let others make decisions.

How well would this student like being a student in your English class?

Number 4. Here is an orderly person. He likes to have written work neat and organized, to make definite plans before starting to work on a problem, to have things organized, to keep things neat and orderly, to have a special place for each of his things, to always have his meals at a definite time, to have things arranged so they run smoothly and without change.

How well would this student like being a student in your English class?

Number 5. This person is something of a show-off. He likes to say clever and funny things, to tell jokes and stories, to talk about his adventures and experiences, to have others notice him or say something about him, to wear unusual clothes, to be the center of attention.

How well would this student like being a student in your English class?

Number 6. This person is the independent type. He likes to be able to come and go as he pleases, to make up his own mind, to say what he thinks, to feel he can do what he wants to, to do unconventional things, to avoid situations where there are many rules and regulations, to not care what others think, to criticize parents and teachers.

How well would this student like being a student in your English class?

Number 7. This person needs close ties to others. He likes to be loyal to friends, to be in friendly groups, to do things for friends, to make new friends, to do things with friends rather than alone, to have as many friends as possible, to share things with friends, to have many close and loyal friends.

How well would this student like being a student in your English class?

Number 8. Here is a person who likes sympathetic attention. He likes to have others provide help when he is in trouble, to seek encouragement from others, to receive sympathy and understanding about his problems, to have others be kindly, to receive a great deal of affection from others, to have others do favors for him, to be helped by others when depressed, to have others feel sorry for him when he is sick, and to have a fuss made over him when hurt.

How well would this student like being a student in your English class?

Number 9. This person is the dominating type. He likes to argue for his point of view, to be a leader in groups to which he belongs, to make decisions for a group, to be regarded by others as a leader, to be elected chairman of committees, to settle arguments between others, to persuade others to do what he wants, to "boss" other students, to tell others how to do their jobs.

How well would this student like being a student in your English class?

Number 10. This is the helpful, sympathetic type. He likes to help friends when they are in trouble, to do favors for others, to assist less fortunate children, to treat others with kindness and sympathy, to forgive others, to do favors for others, to be generous with others, to feel sorry for others who are sick or hurt, to show a great deal of affection for others, to have others tell him their problems.

How well would this student like being a student in your English class?

Number 11. This person enjoys change. He likes to do new and different things, to meet new people, to have changes in his daily routine, to try new things, to keep up with new fads and fashions.

How well would this student like being a student in your English class?

Number 12. This person seems to enjoy attacking others. He likes to attack other students' ideas, to tell others what he thinks of them, to play mean jokes on others, to criticize others, to make fun of others, to tell others off, to get revenge for insults, to become angry, to blame others when things go wrong.

How well would this student like being a student in your English class?

Number 13. Here is a person who likes mental stimulation. He likes to know the "why" of things, to really understand things, to find things out for himself, to work on difficult problems, to join in activities requiring mental effort, to figure out new ways of doing things, to try to solve riddles, to do things which make him think.

How well would this student like being a student in your English class?

Do not fill in the remaining boxes on card 3.
Leave them blank.

STOP

APPENDIX 6

PROPOSAL FOR A THREE-YEAR PILOT STUDY IN ENGLISH LINGUISTICS

PREMISE: Use of a scientifically-based linguistic analysis of the English language in high school (junior and senior) English courses, pedagogical devices being adequate, will give the student:

(1) a heightened awareness of the structures of his language;
(2) an understanding of the patterned nature of language;
(3) an understanding of the function of language as a communication system;
(4) an understanding of the interconnections of language and other facets of the cultural system.

Use of such an analysis with a high degree of pedagogical sophistication may also provide the student with:

(5) a heightened ability to use the structures of his language in oral situations (language is used here to refer solely to human verbal communication);
(6) an understanding of the interconnections between the language patterns and the patterns of the writing system;
(7) a heightened ability to use the mechanics of the writing system -- i.e. punctuation and spelling;
(8) a heightened ability to transfer socially acceptable patterns of syntactic and semological levels to the writing system -- i.e. stylistics.

It is furthermore premised that a scientifically-based, orderly presentation of English language structures will lead to an earlier mastery of those structures than is currently possible under the hit-or-miss presentation they are often given today. This, in turn, will give the student considerably more time in his high school English classes for actual composition. The net result should be students who are more knowledgeable than the majority of high school graduates are at the present and students who are better able to utilize their language in practical, everyday situations.

SUBSTANTIATION OF THE PREMISE: This premise and its sub-sections were subjected to a three-year period of experimental and contrastive study (1962-63 through 1964-65) by the Buffalo English Linguistics Project, a joint project of the U.S. Office of Education and the Research Foundation of the State University of New York. The results indicate a strong sensitizing of students to linguistic structures through the study of a competent linguistic model. (See Summary of results) A new study is needed to provide guidance in the best means to capitalize on this sensitivity.

PROPOSAL: In the light of the above premise and its rather conclusive substantiation, it is proposed that the materials developed by the Buffalo English Linguistics Project be used, in revised form, over a three-year period in the 9th, 10th, and 11th grades in an effort to further substantiate the premise and, in particular, to substantiate sub-sections 5, 6, 7, and 8 through the development of refined pedagogical devices of instruction. It is proposed that such a Pilot Study be under the sponsorship of the Buffalo English Linguistics Project and that two schools be chosen to participate. These schools will be chosen from those who participated in the Project work during its experimental stages. One school should be one in which the participating teachers have had an in-service course in linguistics and the other school should be one in which the participating teachers have not had such a course.

Project personnel are hopeful that this proposed Pilot Study will become a reality, since it would provide the first opportunity in this country for this system of linguistic analysis to be used on full-scale in public high schools with a careful study of the results. It is felt that the Pilot Study could point the way to other schools in other parts of this country and Canada toward effective, careful, and thorough use of linguistically-based English language materials.

INSTRUCTIONAL MATERIALS: Texts on the structures of the English language could be provided by the Buffalo English Linguistics Project. Three volumes would be provided. Each volume would build sequentially on the prior volume. Volume One would be suitable for use on the 7th-9th grade levels; Volume Two would be suitable for use on the 9th-11th grade levels; and Volume Three would be suitable for use on the 10th-12th grade levels. In this Pilot Study it is suggested that Volume One be used for the 9th grade, Volume Two for the 10th grade, and Volume Three for the 11th grade.

Each volume would be concerned with certain specific topics of the language itself, with problems of relating the language structures to composition, and with problems of relating these structures to literature -- its reading and interpretation. These volumes will hope to accomplish all of the goals listed in the PREMISE section of this Proposal, with considerable emphasis placed upon understanding of language structures and utilizing these effectively in oral and written composing. A full list of the topics to be covered in Volume One is given at the end of this Proposal. Contents of Volumes Two and Three are suggested.

All parties concerned with the Pilot Study should agree to use only the language texts provided by the Buffalo English Linguistics Project and the usual literature texts. No supplementary materials in composition, speech, or grammatical analysis should be used. The reason for this stipulation is that no currently available composition, speech, or grammar texts use the same language analysis that is used in the Project texts. The presentation of two or more variant types of analysis, it has been found in the past, serves only to confuse the student and to obscure the analytical points of the linguistic presentation, unless the eclecticisms are well-planned, and understood, in advance.

GRADE LEVELS AND CLASS TYPES: During the first year of the Pilot Study, only 9th grade classes should be involved. It is suggested that three or four sections, in each school, be given the materials. It is further suggested that these classes might represent basic, average, and accelerated groups. The latter suggestions, however, may be subject to scheduling problems of the achools and their over-all solution.

During the second year of the Pilot Study, only 10th grade classes should be involved, with the same stipulations as made above for the first year of the Study prevailing. During the third and final year of the Pilot Study, only 11th grade classes would be involved, also with the same stipulations as above.

STUDENT PARTICIPATION: Students selected for participation during the first year of the Pilot Study would be required to complete the full three-year program except under very unusual circumstances -- extreme parental objection, insoluble scheduling problems within the school, extreme and disrupting student objections to participation. It is of course realized that some students may leave the school during this time period and that new students may enter the school. These exceptions to the above stipulations are understandable. The major point is that there must be a core of students who begin the Study and see it through to its completion.

If the participating schools wish to use the materials on the 9th grade level as well as the 10th during the second year of the Study, and on the 9th and 10th grade levels as well as the 11th during the third year of the Study, this would be up to them. If such a decision is made, it is hoped, however, that these students will be given the opportunity to finish the three-year sequence, even though the Pilot Study program itself might terminate after the first three-year core of students has completed its studies.

TEACHER PARTICIPATION: Teachers who elect to teach the Pilot Study sections during the first year should continue to teach Pilot Study sections during the second and third years of the Study, unless they leave the school system or have violent objections to the system of analysis being presented. In no instance should a teacher be asked to teach a section of the Pilot Study class without his complete understanding of all the parts of the program or without his whole-hearted consent. It should be realized that this stipulation will mean that 9th grade teachers during the first year of the Study will be 10th grade teachers during the second year, and 11th grade teachers during the third year. Each school should be certain before entering the program that such arrangements of teacher-scheduling are possible within its school system.

CLASS TIME TO BE USED: Each volume will be designed so that its full contents can be covered in a 20-week period. This should be interpreted to mean 100 hours of instruction distributed as 20 blocks of instruction, each block consisting of one hour's instruction a day for five consecutive days. The 20-week period must be spread out over both semesters of the academic year; it may not be concentrated in a single semester's time.

Each teacher will be required to cover the full content of the volume and to do so in the exact order that the materials are presented in the text. It is also stipulated that the full twenty weeks must be used solely for the text material.

The precise planning of the coverage is left to the teachers and their department chairmen. Each teacher will, however, be asked to present a syllabus listing what will be covered during each week of the semester (both text materials and literature materials) prior to the beginning of each school semester. Copies of these syllabi should be submitted to the Buffalo English Linguistics Project office. It is suggested that the study of literature and study from the Pilot text be inter-mixed in such a manner that no single protracted period will be used solely for the Pilot text nor solely for literature. It is also suggested that all Pilot Study teachers teaching similar sections -- e.g. 9th grade accelerated, 10th grade basic, 11th grade average, etc. -- use roughly comparable lesson plans, at least within each school and preferably between the two schools as well.

TESTING PROCEDURES: Though the Pilot Study is in no sense a comparative experimental program (the experimental part of the Buffalo English Linguistics Project's program has been completed), some data will be gathered to evaluate the efficacy of this program in the two selected schools in comparison to their regular English program. For this purpose, after the experimental groups have been selected, other students will be paired (on an individual basis) with these for control purposes. Both groups will be tested at the beginning of the program and at the end of the three-year study. They will be tested with such devices as the Modern Language Aptitude Test, the ITED Test 3 (Correctness) and the S.T.E.P. writing test. The control students will not be kept together, as will of necessity the experimental group, but will proceed through their school program in random fashion. The testing program, then, will compare the achievement of the group receiving this special instruction with students participating in the normal program of each school. Other tests, normally administered by the school will also be recorded for comparative purposes. In the experimental text, individual chapter tests are included and may be used as the teacher wishes.

MARKING PROCEDURES: A uniform set of marking procedures should be established for the marking of exercises in composition. These procedures would be given in detail in the TEACHER'S KEY which would accompany each volume of the text. They should be followed carefully, without any reliance on previously learned marking systems or philosophies. This would be essential, since the nature of the structures being considered and the order of their consideration in the texts is somewhat different than the structures and order of presentation in other texts. This is not to interfere with normal grading procedures, having only to do with the marking of compositions.

PARTICIPATION BY BUFFALO ENGLISH LINGUISTICS PROJECT PERSONNEL: Buffalo English Linguistics Project personnel would participate in the Pilot Study only as advisors. They would not guide the classroom instruction, control the testing procedures, nor alter the system presented in this Proposal in any way without the express agreement of all school personnel concerned. In the same manner, no school personnel would make any change in Proposal procedure or content without the express agreement of Project personnel. Associated major personnel of the Buffalo English Linguistics Project are:

Henry J. Sustakoski, Principal Investigator
Henry Lee Smith, Jr., Principal Linguistic Consultant
Hans Gottschalk, Investigator
Julian Granberry, Linguistic Consultant

EVALUATION SESSIONS: Periodic evaluation sessions may be called by the English Department chairmen, by the guidance, curricula, and administrative officers, or by the school boards when deemed necessary. Project personnel could be asked to attend, depending completely on the wishes of the schools. It is suggested, however, that periodic meetings, both within each school and between schools, be planned.

TOTAL SITUATION: The total situation is intended, in short, to be as much like a normal teaching situation as possible. The environment should be as though the schools were simply using a new text in English without any extensive outside assistance or interference.

VOLUME 1 CONTENTS

A LINGUISTIC APPROACH TO ENGLISH: BOOK ONE

PART I: THE SETTING OF LANGUAGE

INTRODUCTION - An Approach to Composition

Chapter 1 - The Concept of Culture
A detailed discussion of the anthropological culture concept. The relationship of language to total culture. TIME FOR COVERAGE - 1 WEEK

Chapter 2 - The Nature of Communication
A thorough, non-technical discussion of the mechanics of the communication process. Not based on meaning and semantics. TIME FOR COVERAGE - 1 WEEK

Chapter 3 - The Nature of Language
A discussion of the distinguishing characteristics of language. The Origin of language. TIME FOR COVERAGE - 1 WEEK

Chapter 4 - Dialects
A thorough, non-technical discussion of dialect. A discussion of standard dialect. TIME FOR COVERAGE - 1 WEEK

Chapter 5 - Composing
A rather complete listing, with many examples, of the major syntactic patterns of the American Standard Dialect (phrase, clause, and sentence patterns). TIME FOR COVERAGE - 1 WEEK

Chapter 6 - The Field of Linguistics
A discussion of the scientific method. The nature of linguistics as a scientific procedure. A brief outline of the linguistic method used in the texts. TIME FOR COVERAGE - 1 WEEK

PART II: THE SPEECH PACKAGE

Chapter 7 - The Segmental Sounds of English
A discussion of the consonant and vowel phonemes of English. TIME FOR COVERAGE - 1 WEEK

Chapter 8 - The Suprasegmental Sounds of English
A discussion of pitch, stress, and juncture. TIME FOR COVERAGE - 1 WEEK

Chapter 9 - Paralanguage and Kinesics
A discussion of the above two factors and of the total speech package. TIME FOR COVERAGE - 1 WEEK

Chapter 10 - English Dialects and Their Phonemes
A discussion of the manner in which phonemes equate from one dialect to another (i.e., an introduction to morphophonics -- variants only). TIME FOR COVERAGE - 2 WEEKS.

Chapter 11 - Patterns of Speech
A discussion of dialect choice with respect to phonology, paralanguage and kinesics. An introduction to spoken syntactic structures (i.e., an augmentation of the material treated in Chapter 5, with the addition of some intonational factors). TIME FOR COVERAGE - 2 WEEKS.

PART III: THE SPEECH PACKAGE AND COMPOSITION

Chapter 12 - Writing Systems
A discussion of graphic systems as types of communication. Particular attention is paid to alphabetic systems and the English system. TIME FOR COVERAGE - 1 WEEK

Chapter 13 - Intonation Patterns and Punctuation
The interconnections of intonation and the graphic system. TIME FOR COVERAGE - 2 WEEKS

Chapter 14 - Pronunciation and Spelling
The interconnections between pronunciation and the graphic system. TIME FOR COVERAGE - 2 WEEKS

Chapter 15 - Patterns of Writing
Syntactic patterns of the graphic system. The ways in which they differ from the spoken syntactic patterns discussed in Chapter 11. TIME FOR COVERAGE - 2 WEEKS

BOOK TWO - TENTATIVE CONTENTS: A study of morphemics and the history of English, and continued application of the syntactic pattern presentation to composing.

BOOK THREE - TENTATIVE CONTENTS: A study of syntax in thorough detail, of syntax and punctuation, of stylistics and rhetoric, of prosody.